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How to Call a Spade a Spade

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The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.

THE average military man, upon being told that he should study semantics, would recoil in indignant distaste, and probably reply that such matters should be left to the bifocal boys at State College, who spend the better part of their lives among the book shelves. But tell this same man what the word "semantics" means, and he probably would agree, for semantics is nothing more than the study of word significance.

Most of us in the service have at some time puzzled over some masterpiece of gobbledygook, purported to be orders or instructions for our information and compliance.

And probably we have felt the pangs of frustration, seeing a vision of our failing to carry out the intent of one of these masterpieces of confusion—for it is difficult to comply when it is impossible to understand.

Generally, it is possible to comprehend normal military prose, although an interpretation is sometimes required. After a few years, many of us become master interpreters, or perhaps even achieve the ultimate ambition of authoring a few samples of military puzzlers ourselves. Yes, many of us can even look forward to the time when we can think effortlessly in terms of paragraph 1, sub a. sub (2), and break our thought processes down into neat, tritely worded separate paragraphs.

Military Writing

The intent of this article is not to ridicule military writing as such, but to argue for a reform in style, a reform that will permit abandonment of time-worn phraseology, and will permit expression in clear, lucid, economically worded style. Then perhaps "indigenous personnel" will become "native residents" or just "natives." Perhaps then our intelligence will no longer be insulted by "for compliance and appropriate action," instead of leaving it to the recipient to reach the obvious conclusion that something must be done; and "the attention of all concerned is invited to"—will be replaced by the word "see."

Military writing and its abuses would be an essay in itself; it is not intended to do that here, but just to make the observation that if all of us were made more aware of words and their meanings, we automatically would help rescue military writing from its abyss of clichés,

A knowledge of semantics not only will improve the speaking, thinking, and writing processes of commissioned military personnel, but it will aid them in a clearer, more complete understanding of human nature

redundancy, clumsiness, verbiage, formality, and illegible rigidity.

But military writing is only one facet of military semantics. As stated before, semantics is the study of word significance. But words are merely a means of expression, whether they be written, spoken, or thought. It is possible then to restate this definition as general significance—what do you mean?, what does it mean?, what do I mean? The word is not the thing; it merely represents the thought or act or object. Unless we recognize this distinction, the results can be drastic. Wendell Johnson, in Kenneth S. Keyes' *How to Develop Your Thinking Ability*, says, "To a mouse, cheese is cheese. That is why mousetraps are effective."

Military Speech

It is true that in spoken communications the military man is less apt to follow a stereotyped pattern, as he does in his writing. In speaking, each of us tends to be more individualistic, to use his own peculiar phraseology or manner of speech. But who can say that any of us could not improve his speech to make it more intelligible and effective. In receiving a verbal order is it not easier to comply when the order is given clearly and concisely, with no confusing errors of grammar and pronunciation? No, it is not proposed that each of us make of himself a polished orator; rather, we should always keep in mind that our speech is but the vehicle for transmission of our thoughts and ideas to others. If we want our desires or orders carried out with the maximum effectiveness, then it is necessary that we transmit those ideas and orders in such a way that the recipient cannot become confused.

Words, Not Things

We who have trudged through the boondoks at Benning or Riley, or any of the other school reservations, compass in hand, map on clipboard, know full well that the map and the territory it represents can be as different as night and day. This map-territory relationship can be applied to all semantics, and it is a good lesson to remember when we would tend to confuse the map and the territory. The map merely represents the territory; it is not the territory. The spoken or written word represents the object, idea, or act; it is not the thing it represents.

If some stranger steps up and makes an unsavory reference to your canine ancestry, you feel a sudden urge to caress the center of his countenance with a clenched hand. But you know full well that what he says is ridiculous, for there has never been a canine in your family tree. Have you not then confused the word with the thing? Have you not permitted yourself to be separated from reality? The map is not the territory—the word is not the thing it represents.

If someone were to walk up and put two stars on the shoulder of a very junior officer, would that qualify him to command a division? Obviously not, for the stars only represent something, something which he is not and which he is not qualified to be.

Profanity

Another example of a need for semantics in the service is the use of profanity. This does not mean the average individual, who uses profanity moderately, even effectively, at the proper time and place, but the soldier who speaks scarcely a sen-

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tence without uttering an obscenity or a profane word. Why does he do it? In nine cases out of ten, he is trying to build himself into something he is not; he has confused the use of vulgarity and profanity with toughness. By converting his mouth into a verbal sewer, he imagines he has become in body and mind just as tough as the language he uses. He has confused the word and the thing. Conversely, this same man would be amazed to discover that the Golden Gloves heavyweight champion, in a pair of lace pants, can hit harder than he can in his boxing trunks.

Categorical Thinking

It seems that a definite danger exists if our thinking in the service is as stilted and archaic as is our writing. Napoleon said in his maxims, that nothing is absolute in war. How can a man remain flexible if his mind works like a machine; if his thought processes take the form of a paragraph on disassembly of the *M-1* rifle. Such order has its place, of course, but the mind should not be trained to perform mechanically. Originality and flexibility are necessary and important in the thought processes of men who constantly must meet changing conditions. The danger in categorical thinking is that the process often becomes the object rather than the vehicle of thought. And that is precisely why the military man should be exposed to semantics; he then can be on guard to protect himself from the heinous accusation of having a "military mind."

Teaching men to think and express themselves clearly is surely just as necessary as teaching them tactics and a host of other military subjects. So why not add a course in semantics to the curriculum in our military schools? If it were done properly, scarcely a student in the class would say that he had not profited.

For the individual who would like to investigate the subject on his own, there is an excellent book to start with—*Language Habits in Human Affairs*, by Irving J. Lee, published by Harper and Brothers, New York.

Thought Course

This is not the type of subject one memorizes, or absorbs by listening to lectures. Semantics is a thought course, and is best taught by means of lectures, requiring the students to maintain current notebooks on their interpretations of the lectures. The student should attempt to relate his instruction, which is necessarily on a theoretical plane for the most part, to the problems of everyday life, and particularly to military life. Only by thinking into it will he learn how he can apply it.

An understanding of semantics will not only improve the speaking, thinking, and writing processes of the individual, but for the officer and noncommissioned officer it will be an aid to the understanding of human nature. Semantics has a definite psychological relationship, one which those of us whose job it is to lead others cannot afford to ignore.

Henry James expressed the importance of semantics very simply when he said, "All life comes back to the question of our speech, the medium through which we communicate with each other."

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Authors submitting materials to the MILITARY REVIEW are requested to forward manuscripts through the Security Review Branch, Office of Public Information, Office Secretary of Defense, The Pentagon, Washington 25, D. C.

MILITARY GOVERNMENT LOGISTICAL FUNCTIONS

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The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.

WAR is a duality: destruction and reconstruction.

The military commander, employing tactical and strategical means, applies himself to accomplishing the *destruction* of the enemy's will to fight and of the enemy's logistical potential. His aim is to induce the enemy either to withdraw or to sue for peace.

As soon as the enemy has withdrawn, short of peace, or as soon as part of the territory of the enemy has been exposed and occupied by friendly troops, the commander applies himself to mobilizing the economic resources of the occupied territory in order to benefit most effectively the further achievement of his military objectives.

The consequent *reconstruction* of the economic resources of the occupied territory increases the logistical potential of civilian supplies, facilities, and services available in support of his further military effort toward the destruction of the enemy.

Such reconstruction also enables the occupied territory to become self-sufficient and certainly not be a drain upon our other resources elsewhere. To accomplish this reconstruction, military supplies, facilities, and technical services are employed.

Thus, it follows from this that military government logistics, itself, is also a duality: military and civil.

On one hand, there is logistical support of the military effort through utilization of civilian supplies, facilities, and services. On the other hand, there is logistical support of the civil economy through utilization of military supplies, facilities, and technical services.

This duality may be stated even more briefly: the civil potential supports the military effort; the military potential supports the civil effort.

Achieving a balance between both and meeting the implications of both are the primary functions of military government logistics.

Warfare and Politics

Clausewitz established that warfare is politics in another form. Others contend that war is a continuation of politics, but it is equally valid to assert that the objective of warfare is political. Just as war has its origin in politics, and its conduct is also political in nature, so are its aims political. If the political aims are not won, military victories could very well be fruitless. We must win the peace as well as the war.

Just as, by destruction, wars may be won to achieve political ends; so, by reconstruction, the peace may be won to achieve political ends. One without the other is incomplete—to win the war and lose the peace is pointless.

Warfare is not a game of sport wherein the contestants match their skill and prowess, and then depart the field, one the winner, another the loser. Winning the contest is but preliminary to achieving the aims of the contest. Warfare—destruction—is only one of the means for achieving the political ends. To destroy only is barbaric. To destroy and not repair the destruction is to invite revenge —an incomplete political solution—and in addition, world condemnation.

Our often declared national objective, after achieving military victory, is the withdrawal of all foreign forces leaving a peaceful, economically stable nation with a representative form of government.

Therefore, it still further follows from this that the commander having area responsibility will have a civil mission as well as a military mission.

Logistically thinking, then, he must contemplate the civil mission as well as the military mission. This unity of thought is represented in military government logistics.

What has been stated thus far is the theoretical point of view. Let us now consider military government logistics from a more practical point of view. Let us translate theory into practice.

First, in order to gain some idea of the magnitude of military government logistical operations, let us look at only one of its particular functions—that function known as "civilian supply." It is the provision of the civilian requirements of a territory where United States military forces are employed as may be required by agreement, law, or humanity, or in furtherance of the commander's mission.

In the period between September 1943 and September 1945, we delivered 7 million tons of civilian supplies at a cost in excess of a billion dollars. Significantly, 70 percent was delivered during active military operations when only that effort which assured victory was permitted.

In the fall of 1944, 30 percent of military shipments from the United States to the Mediterranean carried civilian supplies. While the Battle of the Bulge was at its height, nearly 1½ million tons of civilian supplies were called forward. In the heat of operations for the liberation of France, 1,500 tons a day of essential military supplies and critical military transportation were withdrawn from logistical support of front-line troops in order to feed the civilian inhabitants of Paris until civilian supplies and transportation could be mobilized.

During the last 3 years, the Army was authorized to spend 700 million dollars for civilian supplies to Korea; another billion is contemplated for the next 3 years.

In view of this, it is evident that the civilian supply function of military government logistics played an important role in the strategy of victory during World War II. Its role in Korea has been of proportionate magnitude.

Yet, civilian supply is only one of the particular functions of military government logistics. There are many others. Those which also will be treated here

The military mission frequently dictates the control of the indigenous civilian population within an area of operations. When this occurs, the military commander there assumes huge civil logistical responsibilities

include: meeting military requirements by local procurement of supplies, facilities, and civilian services; handling of sick and wounded civilians; mass evacuation of communities; and civil transportation.

Before we consider these, however, let us look at military government logistical planning in a general sense.

Logistical Planning

As has been indicated, all logistical planning must contemplate supporting the civil as well as the military missions of the commander.

Prior to the penetration of an area where military operations will be conducted, the military government logistical plan must be prepared to provide for each stage in the step-by-step advance across the area to be occupied or liberated.

Military government logistical considerations should be included in all logistical documentation, such as logistical estimates, administrative orders, logistical annexes to operations plans, and also considerations relating to administrative and logistical matters in the operations orders of all echelons of command.

The nature of some of those military government logistical considerations will be developed herein.

It is fundamental, however, that military government logistical planning for the area of intended operations should give consideration to such basic planning data as:

1. The production, processing, and distribution system, as well as the probable effects of military action upon that system.

2. The agricultural and industrial pattern of the nation, including its need for imports.

3. The essential movements of supplies, particularly food and fuel, from surplus to deficit areas.

4. The standard of living, including the health and dietary factors, involved.

Sources of Information

There are three principal sources of information for military government logistical planning: Intelligence Studies; Military Government Area Studies; and On-the-ground Surveys and Reports.

Intelligence Studies, which describe foreign countries and possible theaters of operations, are an important source of information. These studies cover the following subjects of interest to military government logistics: topography of foreign areas (including climate and weather), land forms, drainage, vegetation, and soils; population and manpower resources; actual and potential industrial production; harbors and other phases of transportation, power sources, water supply, and signal communication; scientific and technical capabilities.

Military Government Area Studies are prepared prior to military occupation of given areas. They contain as much recent information as is obtainable. Based on these studies, occupation plans are formulated and personnel are indoctrinated for occupation duties within the given areas.

On-the-ground Surveys and Reports are made by the military government organization after the area is uncovered. These surveys and reports serve to confirm the

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data of prior planning or to emphasize the need for adjusting plans to actual conditions. They also are of assistance in refocusing occupation objectives, policies, and programs for the more expeditious accomplishment of our ultimate national objective. That *ultimate national objective*, as was indicated before, is the early withdrawal of our military forces consistent with leaving behind a peaceful, economically stable nation with a representative form of government.

Military Requirements

In the base development plan for the area to be occupied or liberated by our military forces, maximum utilization of civilian supplies, personnel, facilities, and services is the rule.

The use of local civilian labor releases our troops for supervisory work for combat and direct support of combat operations.

No new construction should be contemplated where there is a possibility of using existing facilities. Existing water, electrical, and sewerage systems can be used for military needs, employing normal civilian operating and administration personnel under military supervision. In addition, local construction materials, sand, gravel, rock, and standing timber, as well as limestone or other stone quarries, cement plants, sawmills, and manufacturing plants may be exploited for military use.

Railroad construction should be directed toward rehabilitation of existing systems. In this effort, fixtures and equipment may be obtained by salvage or cannibalization of facilities which have been damaged or are of secondary importance.

Docks, barge wharves, and tanker facilities would have high priority in early rehabilitation of facilities for military use in coastal areas.

Existing commercial and captured enemy communication facilities would also be used whenever beneficial to the military effort. However, alteration of such facilities should be strictly controlled to avoid required reversion later to the preexisting system.

Local entertainment facilities and personnel can be exploited to supplement Special Services' effort in building troop morale.

Insofar and as rapidly as possible, construction, stevedoring, manufacturing, and similar projects should be assigned on a task or contract basis to the civilian industry of the area as a rehabilitation factor in the revival of its economy. Obviously, contract compliance will be inspected and enforced in the usual manner.

Local Procurement

The local procurement of supplies, facilities, and services in occupied territory is a normal function of military government logistics. Every opportunity should be exploited to obtain our needs locally and the resources of the territory should be utilized to the utmost to support both the military and civil missions of the commander.

A few of the many objectives of local procurement are:

1. To decrease the industrial burden on the United States.

2. To conserve domestic critical materials in the United States.

3. To promote local economic and industrial self-sufficiency.

4. To lessen procurement lead time.

5. To provide sources of resupply other than United States sources.

6. To decrease the war production manpower demands in the United States, as well as to increase the manpower locally available to our military forces.

The availability of military supplies within the area should not preclude their supplementation by local procurement. Wherever feasible, supply items should be

procured in substantial amounts to include the total production of manufacturing facilities. Supplies most desirable for local procurement are supplies of great bulk or tonnage, such as food, forage, fuel, gasoline, lubricants, and engineer materials. Local procurement of such bulky items contributes significantly to increasing the supply for military operations by releasing valuable cargo space for special technical supply items which are not generally available outside the United States.

However, due consideration must be given to the needs of the civil economy consistent with the urgency of the needs of our military forces. Local procurement would be avoided when it results in the necessity for importing the requirements of the civilian population. When the minimum needs of the native population are involved, the local requisition or purchase of the following should be avoided: food, livestock, and fodder; drugs and medical supplies; insecticides and soaps; and fuel, except perhaps that obtained by the temporary exploitation of forests.

Real estate or facilities should be utilized, whenever possible, only after prior acquisition through established procurement channels. Such facilities include: land, buildings, rights of way, piers, docks, bridges, railways, utility and communication systems and similar structures, together with the fixtures or appurtenances permanently attached, such as machinery, equipment, or tools.

Organization

The utilization of local resources requires staff planning and co-ordination at all levels. Hence, the chiefs of supply services and G4s of major commands, in co-ordination with G5s, should continually explore the possibilities for the local procurement of supplies, facilities, and services.

The military government organization should directly assist procurement agencies of all echelons of command—particularly in the utilization of local resources, in the determination of civilian needs, in the uncovering of hidden resources, and in providing liaison with civilian agencies.

Toward this end, the military government organization would especially endeavor to disclose the civilian supplies, facilities, and services available for the accomplishment of the military mission of the commander.

Purchasing and Contracting Offices, Area Labor Offices, and Area Real Estate Offices, on the other hand, should closely co-ordinate their activities with the military government organization in procuring the supplies, facilities, and services needed for the military effort, as well as in the demands they make upon the civil authorities.

Methods of Procurement

Procurement may be by seizure, by purchase, or by requisition within the occupied territory. However, in territory friendly to the United States, procurement may be accomplished by especially prescribed procedures or fiscal arrangements, or by direct cash purchases.

Seizure of local resources should be considered only when justified by urgent military necessity. Since that implies a temporary condition, compensation for its use should be made—particularly in the case of private property—as soon as practicable, thereafter.

Purchase, or procurement by cash payment, should be restricted to services and small amounts of supplies.

Requisition may be in either of two forms: direct or indirect. The requisition may be made directly on the vendor by the using agency, or it may be made indirectly upon local civil authorities through the military government organization. In this latter case, the local civil official, as agent of his government, procures the needed supplies, facilities, or services.

Since requisitioning can become a source of friction and misunderstanding between military personnel and civilian owners, direct requisitions should be avoided and the indirect process, through the military government organization, should be used to the greatest extent possible.

Prices, wages, rentals, or fees for matériel, personnel, facilities, and services should conform to practices existing prior to uncovering of the area. Scales should be prepared on a preplanned basis and adjusted to on-the-ground conditions, after consultation with local civil authorities through the military government organization. Price discipline must be observed and competition between military using agencies should be avoided.

Military personnel should be urged to increase allotments for bonds, life insurance, and saving deposits. This tends to decrease inflationary impact of "soldier spending" on the civil economy and on military procurement costs.

Civilian Requirements

Military government logistical planning should provide for the minimum supplies and assistance necessary to supplement civilian resources.

The determination of civilian requirements is more complex than the determination of purely military requirements because of the many intangible factors involved.

There are no tables of organization and equipment conveniently available for guidance, and civilian requirements are extremely diverse. They include all kinds of items basic to the needs of modern society and this during or subsequent to a period of warfare, when normal sources of production or supply have been either eliminated or curtailed. In addition, civilian requirements are sensitive to actual military operations, and may undergo sudden drastic changes.

The commander, in estimating civilian requirements, must give special consideration to such factors as: nature and status of local production; time of harvest; percentage of population living in cities; extent of scorching by the enemy; and breakdown in transportation between production areas and consuming areas.

Consideration must also be given to the climate, customs, and general way of life of the inhabitants—dietary habits vary with the locality. While urban areas are largely dependent upon outside food sources, rural areas are largely self-sustaining.

Quantities

An audit of the records of wholesale merchants may disclose what the past imports were and serve as a basis for estimating requirements.

The availability of refrigeration facilities for food, as well as for medical supplies and the potability of available water should be determined.

The minimum initial civilian requirements can be anticipated with reasonable certainty. Food, fuel, water, shelter, clothing, and medical supplies will meet the most immediate needs.

For planning purposes, estimates of these civilian requirements for initial supply may be converted as much as possible into units of tons per thousand of population in the objective area per day of ration which is expressed in quantity per thousand per day (QMD).

This QMD, in turn, may be expressed in terms of varying rations for urban and rural type areas. In addition, QMD may be expressed in terms of the proportion for food, fuel, clothing, and medical supplies.

QMD units, containing the separate proportions, would then be allocated to the type area on a preplanned basis and included in the scheduled supply plans for forward areas, particularly in the initial period of tactical operations.

Where stocks of local supplies are found to be adequate to meet civilian needs as each military objective is reached, the demand upon military supply channels may be reduced—at least in the early phase of an operation—by holding back imports in storage areas and by exploiting local resources to the maximum. Allocated supplies would then be called forward as needed later and priorities adjusted to conform to actual on-the-ground needs.

Significantly illustrative of this process to be worth quoting is the following extract from the After Action Report of the G5 Section, 12th Army Group, in regard to the landing in Normandy during World War II:

The schedule of imports up to D 30 included the 'hard ration' consisting of 8 ounces of tinned biscuits, 4 ounces of canned meats, 2 ounces of pulses, 2 ounces of canned milk, and 1 ounce of vitaminized chocolate. The canned milk and vitaminized chocolate were included for issue to children and expectant or nursing mothers. After D 31, the bulk ration was scheduled. This consisted of 15 ounces of flour, 21 ounces of meat and vegetable stew, 2 ounces of dehydrated soups, 1 ounce of pulses, 2 ounces of milk, evaporated, .5 ounces of fats, .5 ounces of salt, .5 ounces of sugar, and a weekly allowance of 2 ounces of coffee. These daily rations were developed as a feeding guide. Issues of supplies were limited to the commodities not available locally to bring up to 2,000 calories a person a day. Clothing was calculated on the basis of 8 pounds a person for 10 percent of the population. The requirements for blankets were computed on the basis of one blanket for every 20 persons. The planned shipments of Civil Affairs supplies for the area of this command for D to D 14 amounted to 360.3 gross long tons and 8,344.5 gross long tons for the period D 15 to D 41. The scheduled imports for D 42 to D 90 amounted to 22,947 gross long tons.

Similar to the QMD unit is the Emergency Reserve Food Unit (ERFU), of the United Nations Food and Agriculture Organization. ERFU was established to combat famine or emergency food shortages resulting from war, crop failure, flood or misfortune. Each ERFU furnishes 1,200 calories a day for a million persons for a month. The affected area would provide the remaining calories needed.

Civilian Supplies

Civilian supplies—distributed initially as an area is uncovered—should be capable of simple, speedy distribution and immediate consumption with minimum preparation or handling. The supplies would include: canned foods, ready-made garments, or tents for shelter.

Later, bulk-type supplies may be furnished, such as food requiring preparation, cloth to be made into clothing, or lumber for shelter.

Providing bulk-type supplies requires less vitally needed transportation, increases the QMD units a load, and accomplishes more rapidly the civil mission of the commander.

Conformity must be observed with the dietary habits of the population and the traditional mode of food preparation. Fuels, of the types in common use locally, for cooking should receive a priority equal to that for food supplies.

Water is always a critical item and the commander should ensure a potable water supply for civilian consumption.

Supplementing local resources with such items as fertilizer, seed or salt, or with spare parts, may encourage quick local production of large amounts of needed supplies at small cost.

Available items should be utilized to the utmost, although the types of items must be substituted, or specifications disregarded.

Parts may be cannibalized in order to rehabilitate industries, transportation, communications, and utilities to an operational stage.

Because civilian supplies are subject to the same field conditions as military supplies, similar packing and marking standards should be applied.

Not to be overlooked is the public relations value of identifying supplies for civilian use as having come from the stocks of the military occupier or as a result of an economic aid program of the occupying forces. Such items should bear distinctive marks or coloring to so identify them and thereby gain the good will of the inhabitants.

Captured Enemy Supplies

Because captured enemy supplies often may parallel the uncovering of an area, every effort should be made to exploit them to meet military government logistical requirements. This will reduce the need for moving up equivalent quantities of civilian supplies from the rear which increases the transportation available for moving military supplies forward.

Military use of captured enemy supplies is often unsatisfactory, because of inferior and dissimilar quality, packaging, and marking, as well as the difficulty of repairing and maintaining them, however, they may be adaptable to civilian use.

Captured enemy vehicles may be used to rehabilitate civilian transportation and to assist in the movement of goods required for revival of the economy. Enemy machine tools and equipment may be used to rebuild or provide equipment for civilian plants to manufacture products for our military forces, as well as for the civil economy.

Technical supply services should prepare lists of certain controlled items. As for example, a captured enemy signal supply dump may contain such controlled items as cable, open wire, and electronic equipment which would be reserved for ultimate use by the Signal Corps. All other items would then be automatically allocated to the military government organization for civilian use.

Sick and Wounded Civilians

In the interest of humanity and as the tactical situation permits, during active military operations, military aid stations should administer emergency medical treatment to civilians. Civilian casualties in division areas would be evacuated to medical installations on a second priority basis through the military evacuations system and by the transportation available. Surplus transportation proceeding to the rear can be used for the conveyance of sick civilians.

Hospitalized civilians should be segregated within military medical installations, and transferred to civilian facilities as soon as their condition permits. To this end, every effort should be made to rehabilitate civilian hospitals on a first priority basis to accommodate civilian sick and wounded. In addition, civilian medical supplies and facilities should be treated as private property.

Epidemic disease control—whether a threat to the troops or to the civilians—should be co-ordinated between medical personnel of the military medical service organization and public health personnel of the military government organization.

Evacuation of Communities

It sometimes becomes necessary to evacuate civilians from the area of active military operations, from industrialized or densely populated areas to outlying rural districts, or from the scene of imminent combat operations. When possible, however, such evacuation should be avoided.

Evacuation uproots the civilians from their homes, provides material for enemy propaganda, and encourages vindicative

tendencies. Evacuation also affords enemy civilians an opportunity to see many vulnerable army installations, complicates the control of their movements, and increases the difficulty of maintaining adequate security.

Furthermore, evacuation often entails needless use of military transport, as well as expenditures of additional food, fuel, clothing, and medical supplies while the evacuees are away from their homes. This increases the burden upon military government logistical planning. Moving the evacuees in groups may also increase the incidence of epidemics and decrease available facilities for military personnel.

Consequently, it should be operational policy, particularly in a fast-moving tactical situation, that civilians in combat areas be told to stand fast. Such civilians should be retained as near to their places of residence as possible. Individuals who are made homeless by military action should be quartered with their neighbors.

When military necessity dictates the mass evacuation of a community, all of the evacuees as is possible should be placed in nearby communities without establishing refugee camps.

In a retrograde movement, particular attention should be given to the evacuation of key civilians and the members of their immediate families. Key civilians would include those local officials who had been appointed by the military government organization, and other persons who may be treated by the enemy as collaborators in the event of capture. Consideration should also be given to the evacuation of scientific and technical personnel whose training, talent, or experience may be of value to the enemy in future operations.

Mass Evacuation Planning

In the event that the decision is made for mass evacuation of a community, the details of the movement should be arranged in the same manner as a troop movement.

The evacuation should be in accordance with a specific plan. No stragglers or uncontrolled groups should be allowed to congest the main supply routes, or to disrupt the flow of men and of material to the front.

Mass evacuation planning should include consideration of the following:

1. *Transportation.*—Civilian transportation should be used wherever possible, but military transportation should be utilized if necessary.

2. *Distance.*—The distance of the move from the point of departure should be no greater than is necessary to meet the minimum objective for which the movement is planned.

3. *Movement Control.*—The movement should be made in convoy and be rigidly controlled.

4. *Screening.*—Security screening and documentation of evacuees should be accomplished at the earliest moment possible—preferably not later than arrival at division assembly areas.

5. *Identification.*—Every evacuee should be provided—and be required to carry, visibly on his person—a tag identifying him by name, locality from which evacuated, and containing other pertinent information.

6. *Briefing of Evacuees.*—Adequate briefing concerning the purpose of the move and the methods of passive air defense, must be accomplished prior to the loading and departure of the convoy.

7. *Impedimenta.*—Each person should be allowed to take a predetermined allowance of personal effects.

8. *Rations.*—Rations should be provided each person evacuated for the estimated period of the lift at the time of departure. Initial ration issues of food, fuel, clothing, water, and medical supplies should be furnished to the holding area

receiving the evacuees prior to the arrival of the convoy. A physical evidence of an adequate quantity of these necessities would be reassuring to evacuees torn from the security and comforts of their homes by the exigencies of modern warfare.

9. *Housing.*—Housing in the holding area should be such that it would not endanger the health of the evacuees, nor unnecessarily increase the suffering caused by the evacuation.

10. *Medical Care.*—The health and physical well-being of the evacuees should be carefully provided for. The use of civilian medical personnel is mandatory. Military medical personnel should be employed to assure meeting the minimum standards of medical care required. Particular attention should be given to elderly persons, pregnant women, the blind, crippled, and feeble, as well as to very young children. Immunizations and preventive medicine measures should be taken prior to movement, whenever possible, to reduce the incidence of epidemics or spread of contagious disease which may be a hazard to our troops and to our military effectiveness.

11. *Religious Needs.*—As much as it is possible to do so, the religious needs of the evacuees will be discovered immediately upon their arrival at the holding area. Provision will be made to fulfill those needs by making available appropriate facilities for holding meetings and for worship, utilizing civilian religious personnel assisted by such military chaplain personnel as is required.

12. *Duration.*—The duration of the evacuation should be no greater than that necessary to meet the maximum objective for which the movement is planned. However, repeating the evacuation later—because of unanticipated reverses or for other reasons—is wasteful of personnel and equipment. It is also a source of irritation and unrest to the civilians involved. Repeated evacuation may also present a hazard to the security of the troops and interfere with the military effort. However, small groups of evacuees may be temporarily returned to forward areas under escort—when the military situation permits—to care for their crops, to rescue livestock, or otherwise to minimize their personal losses. The need may arise also for civilian labor on military projects in the evacuated area. Provision must be made to compromise such needs with the objectives of the evacuation plan.

13. *Return.*—Plans for mass evacuation of a community should always include provisions for the return of the evacuees as well as criteria for determining the duration of the absence.

Movement Procedure

When a large movement is planned, the following procedure may be used:

1. Refugee control posts would be established to ensure an orderly evacuation from regimental areas to the division collecting point.

2. Evacuees would be transferred from the division collecting point to communities within the division area.

3. Evacuees to be removed from the division area would be transferred direct to the army assembly area, if practicable, otherwise to the corps area from which they would be transferred to the army assembly area.

4. Evacuees would be transferred from army assembly areas to communities, temporary holding camps, or permanent refugee camps, as the case may be.

Civil Transportation

In the necessary movements of civilian supplies and of civilians, such as sick and wounded, displaced persons, or refugees and evacuees, civilian transportation should be used wherever possible, supplemented by such military transportation as may be required.

The Transportation Corps would exercise general operational control over water, highway, and railway transportation in the territory in support of the military mission, just as the Military Air Transportation Service would operate air transportation.

Allocations of portions of the transportation facilities for use by local inhabitants is necessary for the accomplishment of the civil mission of the commander. The military government organization would determine and make known the essential civilian needs, for movement of persons and goods, upon which allocations could be made.

As soon as uncovered, captured enemy motor vehicles that are adaptable to civilian use should be automatically made available to the military government organization to supplement the transportation needs of the occupied territory.

The use of motor vehicles by civilians must be rigidly controlled in order to conserve fuel, tires, and the spare parts essential to the movement of persons and goods required for the civil economy and the military effort.

Civilian transportation should not be requisitioned unless justified by military necessity.

Consideration should be given to minimum military needs, but available civilian transportation must be organized to effect a proper balance between military and civilian requirements.

The use of requisitioned vehicles should be controlled for the benefit of the occupied territory and to reduce the demands upon military transportation for civilian movements. Such vehicles should be returned to their proper owners when it is determined essential to the civil economy, and as soon as it is certain that continued control can be maintained on the use of such vehicles for the benefit of the territory.

Civilian Truck Pools

Immediately after uncovering an area, vehicles, trucks, and animal-drawn carts should be organized into truck pools under the direct supervision of the military government organization.

The pools would be charged with the essential movement of civilian goods and persons on a controlled basis for the relief and revival of the local civil economy.

To the greatest extent possible, such transportation should be owner operated —individual or fleet owners. Public ownership and operation should be avoided, however, as much as possible. It may be temporarily adopted only with certain categories of vehicles—such as captured enemy vehicles, requisitioned vehicles of incriminated civilians, vehicles the ownership of which cannot be determined, and vehicles publicly owned prior to the occupation.

Provision should be made for the allocation of the necessary fuel, tires, spare parts, and maintenance facilities to such civilian truck pools. Issues would be made against approved trip tickets and restricted to the actual, controlled employment of the vehicles in meeting the transport needs of the community served.

Conclusion

In territory where United States forces are employed, the military government organization has the general task of conducting relationships between the military forces and the civilian population, particularly to obtain the assistance of the civilians and to avoid their interference with our military operations.

The Military Mission

The military government organization is engaged in converting the population, industry, and institutions of the area to support the military effort.

Military government personnel, by vir-

tue of their broad assignments in civil administration, are closer than any other in the military establishment to the logistical potential of the area. More than any other military agency, the military government organization is in a position to determine the resources, facilities, and services that are available for military use.

Through contacts with the population and civil authorities, labor may be made available to supplement military manpower potential; industries may be converted to process needed military supplies; and facilities needed for storing and moving military supplies may be discovered and obtained. In many other ways, the military government organization may provide direct logistical assistance to military operations.

The Civil Mission

The commander is impelled by military necessity, international law, and humanity to actions involving complex logistical considerations of Gargantuan proportions.

Mass evacuation of communities, when required, often involves hundreds of thousands of people of all ages and physical conditions.

Neutralizing the destructive effects of war involves providing civilian supplies of many million tons of all conceivable kinds of items required by a modern civilized community—ranging from rations of food to replacement parts for large industrial manufacturing plants.

The services of the community must be revived, whether it involves replacing many miles of destroyed electric power lines, re-establishing garbage and sewage disposal systems, repairing a dam to provide adequate water supply and power, or reinstituting some form of civil transportation to handle movements of people and goods essential to the return of normalcy from the chaos and confusion of war.

The health of our troops and that of the civilians is closely interwoven in an area of military operations. Both must eat and be clothed.

The principle of "the supremacy of the commander" dictates that the commander have primacy in the area of his operations over all matters essential to the accomplishment of his mission. Logistical planning to that end must provide for both his civil as well as his military requirements.

If we are going to be ready to fight overseas, every commander has to prepare himself to cope with beachhead supply; and with military ports; and with the utilization of indigenous labor from the water's edge to the front line; and with organizing, equipping and training indigenous troops; and with feeding the population; and with providing locally for the repair and rebuild of his worn-out military equipment; and eventually with rebuilding the railroads, highways, wire communications and public utilities of a foreign country.

Lieutenant General Williston B. Palmer

UNDERSTANDING SECURITY

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The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.

WITH breaches of security making current headlines, and with otherwise able commanders being publicly condemned for failures to prevent these breaches, it behooves us all to understand fully the fundamentals of this subject of security. It is actually easy to understand.

What does the word security mean? Of what is security composed? One dictionary defines security as the state of being secure. It defines "secure" as "safe; sure or assured; free from care or fear; able to resist attack; certain not to fail, become loose, or be lost; held in close custody." Each of these meanings applies to security in the Armed Forces. But only by answering our second question, "Of what is security composed?" can we fully understand what the word "security" means.

What can we secure? Only three things: information, material, and people. We can consolidate even more since by securing people we are really securing information. There are then two problems in security: *securing information* and *securing material.* We can see immediately that securing information is less tangible than securing material. A simple inventory will reveal whether any material has been lost, but only by learning the enemy's secrets can we determine what information has been lost.

Security of information and security of material overlap in that information can be gained from material; anyone who steals a bomb sight has gained both material and information in a very usable form and the intrinsic value of the item will normally be less than the value of the information it reveals.

The only possible solution of our two problems divides naturally into two parts. These two parts are: measures to ensure that the people involved are trustworthy (personnel security); and measures to see that people are physically restrained from security areas and information (physical security).

These two parts of our solution do not, however, line up neatly with the two parts of our problem. Physical security alone does not solve the problem of securing material, and personnel security alone does not solve the problem of securing information. Both problems are solved only by a combination of personnel security and physical security.

We can now consider that physical security and personnel security constitute our two tools. There is nothing mysterious about them. There is not even anything secret about them, although the particular measures or combination of measures adopted for use at any particular location will normally be classified information. A little thought will result in an analysis—at least in general terms—of everything that comprises personnel security and physical security.

Let us consider personnel security first. Personnel security is, as we have already

defined it, those measures employed to ensure that the people involved in the operation of the facility are trustworthy. This is intangible for only God can know what is in a man's heart and what he is thinking, whether he is loyal to the United States, and whether he is capable of sacrificing his integrity for money. However, this is our problem and although we can never be sure of how successful we are in our personnel security measures, we can adopt some logical, time-tested measures.

First, we can examine each individual's character. We do this by a background investigation which looks into his heredity and environment. These things, we know, are the bases for the formulation of one's character. Second, we can examine each individual's apparent loyalty. This, again, is best revealed by a background investigation. Third, we can look at the record of his associations which is also best revealed by a background investigation. Many persons whose lack of character alone might not lead them to disloyalty, will become disloyal, if they maintain prolonged association with persons or groups who are disloyal.

What has been learned about each individual—as a result of a background investigation—can be used as the basis for our decision to determine if he shall be given access to the information we control.

Certain other things can be done to supplement this background investigation. We can continue, after his original clearance, to compile a dossier about him from information which may come from his associates and other sources. These sources might indicate that he is departing from acceptable loyalty standards since the time of original clearance. We can subject him to tests by lie-detector machines to gain indications of his integrity. The results of tests by such devices, of course, must be evaluated advisedly.

Compartmentalization

Personnel security can be increased by compartmentalization or giving each individual only that information which he requires to perform his job and denying him access to all other information. This process reduces the risk we take with any one person. Enforcement of compartmentalization, in turn, is a responsibility of operating personnel. Mechanical devices, such as discriminating badges, will not accomplish compartmentalization.

After these processes, and there is described above about everything that can be done initially, we are at the mercy of our personnel security system. Our whole security system will be no better than our personnel security, for in the end, we are going to need personnel to install, enforce, and maintain our security program.

We have still another immediate problem—that of identifying those persons who have been deemed acceptable security risks—"cleared" personnel. In identifying individuals, there is no substitute for personal recognition. However, most agencies which have a security problem are so large as to preclude the use of a system predicated upon personal recognition. Most agencies, both large and small, are frequently called upon to do business with "cleared outsiders." We must, therefore, resort to some mechanical means to help solve the identification problem.

Our entire personnel security system is still dependent upon the efficiency and accuracy of the personnel and machinery employed to install, enforce, secure, and maintain our national security program

The most obvious, and the most successful aid in this connection, is the identification badge or pass. Consequently,

people who are "cleared" are issued a badge which indicates their authority for access to security areas and information. This badge then becomes a vital factor in a security system. Upon the validity of each badge or pass is staked our entire personnel security system, as well as the painstaking effort and expense of the background investigation and other initial measures. This leads us to try to make it an item which cannot easily be forged. We attempt to solve this problem by incorporating features which make forgery difficult, although we realize that any credential can be forged. Such features are: inclusion on the credential of the physical description of the one to whom the badge is issued, his signature, his picture, watermarks on the credential paper, sonic features, mechanical features, features which render substitution of photographs and descriptive data difficult, and many other devices. While these features make forgery more difficult they do not prevent it.

Although we make our credentials as "forgery-proof" as possible, the entire personnel security system is still dependent upon the efficiency and accuracy of the personnel and machinery employed to check them. Because the task of checking credentials is a dull and uninteresting routine, effective enforcement is a most difficult problem. This problem is frequently further complicated by individuals who feel that, because of their position, or rank, they should be exempted from the process which is the very foundation of the entire security system. The system can only be effective if it is applied to all.

There are a few additional items which can be incorporated into the mechanical implementation of a personnel security system. Code words can be required as an additional identification means if the number of persons involved is few. This is practicable if dissemination of the code words can be kept to a limited group and all members of the group are reliable.

Most agencies which need a security system are engaged in activities which require the employment of a large number of people. That is, their operational requirements are paramount, and invariably where operational requirements are considerable, many persons, both permanently assigned or employed, and visitors must have access to the classified areas, material, and information.

Visitors pose a real problem to any installation. They can be identified as persons with a proper "clearance" and a specific access requirement only by personal recognition or by a visit-announcement message. In operations of the scope usually encountered in classified projects, personal recognition is not possible and "visit-announcement messages" are used.

Visit-announcement messages can be made very secure. They can be coded messages which spell out the clearance message in great detail.

However, the identification of the visitor upon his arrival is still a problem. Unless there is someone assigned to the installation capable of personal recognition, there is no alternative to accepting the credentials which the visitor presents. The visit-announcement message and the chance of personal recognition make identification a strong link in the chain of personnel security.

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However, none of the personnel security procedures described thus far are any more effective or reliable than the guards who check the badges, the persons who evaluate the files, the persons who make the background investigations, and the persons who send, receive, or record the messages concerning personnel who are to be granted access.

Physical Security

We can now consider the one other tool available to us in our security system, physical security. We can remember that it is entirely dependent upon personnel security for its efficacy. If physical barriers are not designed, installed, used, and dissemination of details concerning them are not restricted to reliable people, it is improbable that they can have any value in our security system. One other general observation can be made. Physical security will contribute to the security of both information and material.

Physical security is composed of such tangible things as combination safes, vaults, underground or otherwise protected structures, walls and fences, lethal devices to prevent unauthorized entry, illumination and alarm devices designed to assist sentries and guard forces, and various combinations of these devices.

If we are to utilize the physical barriers and devices of our physical security system and incorporate them with our guard forces, we must first adopt a pattern of division of areas. We must define and divide areas according to their security sensitivity, and then we must assign barriers and guard forces to these areas in quantities and qualities, commensurate with the security sensitivity of the area in question. Otherwise, we will encounter inconsistencies within our system where the same information or material is more secure in one area than it is in another. In this connection, we must consider the measures taken throughout the United States to safeguard similar material or information. Although local opinion may consider a certain level of security to be justified for particular information or material, however, it is false economy and security to expend manpower and materials for security in one project, when the same information is available to the enemy elsewhere by overcoming less in the way of physical or personnel security.

Physical barriers are limited only by cost and human ingenuity. We can build walls and barriers as high, as thick, and as impassable as we desire and can afford. Our principal limitation in this regard will be that we do not prevent operating personnel from access to the information or material we are securing.

Physical Barriers

We can readily provide any degree of illumination required in a particular area, however, we must consider whether the illumination favors the guard or the hostile forces in each instance. We can provide alarm systems of almost any degree of complexity to assist our guard forces, but we cannot provide an alarm system more effective than the personnel who supervise, monitor, and respond to it.

But in the use of all physical security barriers, it must be remembered that there is not, nor ever will be, any physical barrier, guard force, or combination of them which cannot be breached, bypassed, or overcome. We must, therefore, approach the problem of physical security—at least as it applies to the security of material—in much the same manner as a defense commander opposing an enemy force on the field of battle. We must evaluate our physical security problem and our solution in terms of time. We must first evaluate the minimum time required to breach, bypass, or overcome our barriers and guard forces. Then we must evaluate the minimum time necessary for mustering relief forces at the vital area and as-

sure that this time is shorter than the time required to breach the barrier.

Our physical security system will give us assistance in enforcing our personnel security system in that barriers and guard forces are the means by which we restrain unauthorized persons from access to information and material.

At the outset we stated that we can evaluate how successful we are in securing material by a simple inventory. But in order to take inventories readily we must have accurate and usable records. This means a workable and accurate document control system and accurate and well-kept supply and property records. Proper administration is the first requirement in securing material.

Having established a security system in its two main parts, physical and personnel security, enforcement of all of the imposed rules and restrictions is necessary. Our guard forces will accomplish the greater part of the enforcement, but operating personnel must also assist the guards. Understanding of the need for and purpose of a security system by operating personnel will normally be all that is necessary to gain their co-operation. Because most Americans dislike such restrictions as are required by a security system, an extensive security education program is required. For personnel who are not amenable to education or reason, there is no recourse but the application of disciplinary measures. Agents and fellow workers can provide reports of security violations which should be used as bases for disciplinary measures.

Conclusion

During a period when our national survival may depend upon maintaining security concerning our national secrets, it is necessary that we understand the mechanics of preserving security as well as the need for security. By understanding the reason for restrictions, we are better able to cope with the many tribulations which are imposed upon us by a security system. Such minor irritants as background investigations, identifications, guards, and alarms, are necessary parts of a sound security system.

We face a future in which our military needs cannot be met by voluntary means alone. Our global problems can be met only through the broadest understanding. Both require of all of us a deeper knowledge of our Government and its role in world affairs, a more thorough appreciation of other peoples and their problems, and an awareness of the objectives and techniques of militant communism. Most of all they require a more complete realization of our individual responsibilities and a willingness to contribute what we can to the security of our nation.

General J. Lawton Collins (Ret.)

MILITARY GOVERNMENT IN JAPAN

Colonel John S. Switzer, *United States Army (Ret.)*

The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.

THE military occupation of Japan by the United States was terminated before either of the following postulates could be affirmed with certainty:

That Japan will revert to a feudalistic, emperor worshipping, centrally controlled state, just as soon as she can rid herself of present enforced conditions.

That Japan will become in the space of a generation or so an internationally recognized democracy.

The important question is, however, will Japan adopt democracy with its implication of autonomy down to the local level? A study of history and the achievements of the United States occupation tends toward a favorable answer.

Never before in modern history has there been a prolonged and decisive war between two major powers—one Asian and the other Western. Nor has there been an occupation quite analogous to that of Japan by the United States. It may be said that there is historical precedent for the procedures followed by the United States in her endeavor to establish reforms and changes in Japan. However, the United States was confronted with obstacles not found in those occupations where the peoples involved were of the same, or similar, race and culture.

In the occupation of Japan, there was a wide difference in culture, race, language, intellectual concepts, traditions and indoctrinations of the countries involved which proved to be definite blocks to the introduction of democratic reforms and changes. Yet, considering these blocks and the short time afforded to the occupation for the accomplishment of its objectives, the results well may be termed remarkable.

The occupation began with Western ideals and theories which were clear to the occupational officials, but when these ideals and theories were presented as replacements for the age-old ideals and theories of Japan, the occupation was confronted immediately with practical problems. Both East and West are always at a disadvantage when it comes to the communication of intellectual concepts because the two do not use common terms, or definitions, or share a similar background.

The Objectives

For example, two of the major objectives of the occupation were: to establish autonomy, and to develop and promote equal rights and individualism. To the Japanese, autonomy was a vague and for-

The efforts of the allies to establish democratic principles during the occupation of Japan are without parallel in modern history. The lasting effect of those efforts lays with the younger generation Japanese

eign concept, and individualism had been suppressed for years. Generations of Japanese had been told what to do and what to believe, and that government was the will of the Emperor. The Japanese were familiar with "servants of the Emperor" and government *for* the people, but did not understand "civil servants" or government *by* the people. Individual rights they believed to be for the privileged few, and any rights they themselves might receive to be in the nature of favors or grants. The oriental tradition has been that there are those born to rule and those who are destined to obey. The Japanese have had no Bill of Rights. Hence, autonomy and individualism were concepts not within their mental horizon, and the occupation was forced to coin words in Japanese to convey the meanings of civil service, equal rights, and discrimination.

Autonomy

Any comprehensive study of autonomy in Japan would involve too many factors and require too much space for this article. It would include the cultural influences of India and China; the growth of a clan society which turned to feudalism and later to emperor worship; the rigid indoctrination of the people; isolationism and insularism; and the impact of Western civilization upon the indigenous intellectual, social, economic, and political concepts of the Japanese. Yet, these factors must be kept in mind since in one way or another they had an effect upon the success of the occupational objectives.

It should be pointed out that the rise of democracy in Japan did not begin with the United States occupation. During the Meiji Era (1868-1912), there emerged an urge for the rights and benefits of democratic freedom which were manifested by peasant revolts and aided by the lesser *samurai* and some of the smaller merchants. The latent causes of these revolts were poverty, hunger, oppression, and a growing impulse for equality, opportunity, and basic individual rights. The immediate cause was excessive taxation.

These revolts were ruthlessly and instantly quelled by police action which was greatly facilitated by the revolters' lack of leadership, and by their generations of submissive indoctrination. However, these revolts did signify that the Japanese were at that time becoming aware of fundamental human rights. Later, in the nineteenth century, Ueki Emori wrote and spoke strongly for free speech, liberty, and the right to criticize the merits of national and local policies. Although his statements may be said to have favored the Confucian standard for "superior men," his crusade was indicative of the growing desire for self-expression and individual representation in government.

There were others who dared to challenge the established order such as Doctor Sakuo Yoshino of the Imperial University in Tokyo, and Ozaki Yukio, the editor and publisher.

More recently, pronouncements have been made which were so worded as to give the impression of a deliberate intent to affirm the fact that the Japanese aspired to democratic ways many years ago. Reference is made to the Cairo Declaration and to an address by General Douglas MacArthur upon the fourth anniversary of the Japanese surrender in World War II.

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Article 2 of the Cairo Declaration reads in part:

The Japanese Government shall remove all obstacles to the revival and strengthening of the democratic tendencies among the Japanese people.

General MacArthur in his remarks referred to:

The Japanese latent devotion to the concepts of freedom and the integrity of their constitutional processes.

This article deals primarily with personal experiences. Theories and intellectual reflections are quite all right, but military government was expected to obtain results. Working day-after-day with oriental people in an effort to impart new concepts, methods, and systems required meeting their practical objections or questions with practical answers. The locality discussed is Hokkaido which is the second largest and most northern of the Japanese islands. Incorporated are brief experiences in Yokohama and in Sendai on the main island of Honshu. And there were conferences at which representatives from each of the prefectural and regional teams discussed their problems and progress. It can be reasonably said that, except for its different climate and most inadequate transportation facilities, Hokkaido presented problems and background analogous to the other military government areas in Japan.

As has been previously mentioned, the occupation of Japan by the United States was confronted with special difficulties. To begin with, the surrender came suddenly and this fact in itself imposed complications calling for immediate attention. Then there were conditions characteristic of the Orient, manifested in Japan by emperor worship, the oriental culture, a feudalistic society, the language barrier, generations of indoctrinating the people to do and believe what they were told, and, the traditional resistance of the oriental to anything "foreign."

To carry out the provisions of the occupation, General MacArthur, as Supreme Commander, Allied Powers (SCAP), was granted exceptional authority. His instant concern lay in how to exercise this authority. Three methods were considered. One plan was to retain the Emperor and those currently in government who could be trusted to work honestly with the occupation authorities. A second method was to employ an all-out military government. A third plan contemplated the careful selection of new leaders who would be placed in office by a free election by the people.

The third plan demanded more time than was permitted under the urgency of the situation, since it meant delay to choose the leaders, to set up a democratic elective system, to instruct the electorate, and then to supervise the election. The second proposal, to use an all-out military control, was discarded since neither the State Department nor the armed forces were immediately prepared to provide the personnel who were not only competent, but were sufficiently schooled and experienced to guide and regulate an oriental country—especially one so recently a fanatic enemy.

A course of action was, therefore, indicated which would retain the Emperor, utilize the existing form of government, after purging those officials in government deemed dangerous to the objectives of the occupation, and to establish a modified military government to assist in implementing and supervising the enactment of the Supreme Commander's policies. This was the plan adopted. In brief, SCAP would issue directives to the Japanese Imperial Government and charge that government with seeing that the directives were enforced with dispatch and

thoroughness. In other words, SCAP analyzed a situation or problem, and then deputized proper authority to the responsible agencies—Japanese or United States—to act on the premises, while SCAP retained and maintained control through systems, methods, and procedures to advise, inspect, and supervise.

The staff required to conduct this task was necessarily immense. Every phase of Japanese life demanded attention—official, economic, educational, and social. Existing United States military staff sections were augmented to assist in affairs not strictly military wherein occupational armed forces came in contact with the Japanese. There were numerous lesser responsibilities not so easily classified or combined into a staff section of their own, but which called for prompt decision and action. Experts in many activities were brought from the United States to Japan to help solve the host of problems. It was not surprising that duplication of effort and divided authority occurred in some instances.

The magnitude of the job was readily apparent in the larger urban localities such as Tokyo, Yokohama, and similar cities. There were hundreds of Americans to be seen in uniform, or *mufti*, walking the streets and riding in official cars. Headquarters, in such cities, had the advantages of better living and working conditions, better communications, and a greater percentage of capable interpreters —a most important advantage. Much of the work in these large centers was divorced from direct personal contact with the Japanese since it was largely high-level planning.

In the outlying communities, the task was almost as great but not nearly so obvious. There were districts where members of the occupational forces were seen seldom. An appreciable amount of the work "in the field" consisted of conferences with local government and political officials, with editors and educators, and with small business operators and representatives of farmer and fisherman associations. Visits of inspection had to be made to mines and factories, to mills, to courts, schools, and many other activities. Often these duties required extended journeys to widely scattered, and out of the way places, and, for the most part, this "field work" was delegated to Military Government—later designated "Civil Affairs."

Organization

The Far East Command's Military Government was organized in Manila in 1945. It remained under that headquarters until the occupation of Japan when it was placed under the control of the Sixth Army, which, in turn, transferred it to the Eighth Army when the Sixth Army left Japan.

Early in the occupation, military government units were distributed geographically—or more strictly, by prefecture—although the units were usually located with or near the headquarters of major occupational troop commands. In the beginning, these troop commanders had considerable control over the military government teams operating within their areas. Later, military government in Japan was directed by GHQ, SCAP. However, initially there were 46 prefectural teams, with one regional team to administer and supervise two or more prefectural teams.

While operating at full strength, the Far East Command's Military Government consisted of 500 commissioned officers (from all arms and services), 500 civilians (Civil Service and Department of the Army civilians), 2,300 enlisted men, and a variable number of Japanese employees. An average team comprised 10 officers, 10 civilians, 45 enlisted men, and 120 to 200 Japanese (janitors, drivers, mechanics, interpreters, clerks, and kitchen personnel).

The normal organization for a military government team was:

A Command Section which controlled personnel, discipline, minor policy decisions, administration, and general supervision and co-ordination of all other sections of the team.

A Headquarters and Supply Section which handled messing, billets, transportation, and supply in general.

An Operational Section, consisting of the Legal and Government Section, Labor Section, Economic Section, Information and Education Section, Welfare Section, and Public Health Section, which exercised control over nursing, sanitation, veterinary, and general medical services.

A Finance and Tax Section which was not an integral part of the military government team but was closely correlated with it.

The commanding officer of a team was selected from the older and more experienced colonels—when such personnel was available. The sections were assigned chiefs, most of whom were civilians chosen from a professional occupation which met the requirements of the section to which they were to be assigned. Every effort was made to staff these teams with individuals qualified to perform the duties required of military government. However, this was not always possible and the personnel problem in military government was a serious one.

In general, the training, age, and experience of a team's personnel were variable. Few members of a team had had any prior residence in the Orient. It was the exception to have some one capable of performing his duties without dependence upon an interpreter—and interpreters were not always reliable.

Many officers from the armed forces had received a necessarily condensed and hurried education in military government at universities within the United States, while others had a still more abbreviated education at a school established by the Army in Japan. Using the word "military" in its strictly martial meaning, the conduct of military government in an occupied country cannot be said to follow closely those procedures with which most military men are familiar. The processes are essentially of a civilian nature and, therefore, any military man, who lacks a *thorough* training in civil affairs, finds himself at a disadvantage in a military government assignment. This is particularly true when he first enters upon the assignment. In Japan, the language, the culture, and the customs further complicated matters. Because of these factors some individuals proved to be temperamentally unsuited for the special duties of military government.

Many well qualified civilians did not accept positions in military government in Japan because the inducements offered did not compensate for the hardships and sacrifices of foreign service. Such hardships were separation from family, interruption of career, and in many localities, rugged living and working conditions. This was a matter of personal evaluation of the situation, but it had its effect upon the securing of desirable personnel.

The military government teams functioned under directives from SCAP, and the teams were limited in their responsibilities to supervision, inspection, routine and special reports, general surveillance, and assisting the occupation troop commanders in their contacts with Japanese officials at the local level. Punitive or disciplinary action was not delegated to the military government units.

If the Japanese failed to properly execute or comply with directives from SCAP, it was the duty of military government to report the fact to SCAP at once. The occupational troops had provost authority to which military government could refer certain violations by the Jap-

anese, but in the Far East Command, members of a military government team had no authority to take direct action against the Japanese. The procedure was to warn the proper Japanese person, or persons, that failure to comply with instructions would result in official notification of that fact to higher headquarters. This restriction was one of many conditions which placed a premium upon the individual personality of military government team personnel. And this influence of the individual personality is an important point.

Neither the Japanese nor the Americans, at first, had the foggiest notion of how to deal with each other. The Japanese in the large cities were more accustomed to foreigners but the further away from these centers military government operated, the more intense became the difficulties already enumerated such as customs, language, and strangeness of ways. Particulary in the outlying districts, military government had a little less of everything. It had fewer and a lower class of interpreters. Not many of its American personnel could claim prior experience in the Far East. Facilities too often were inadequate and most teams were short of motor transportation. Both rail and telephone communication were unsatisfactory.

The Japanese were confused and bewildered. They had anticipated humiliation and vengefulness. They expected to be told what to do and when, where, and how to do it. In other words, they expected a rigid and domineering, if not ruthless, occupation. The Japanese were not prepared to entertain such strange ideas, as votes for women, individual and equal rights, and local autonomy.

Serious Errors

The Americans were often too unfamiliar with the Japanese way of life, too prone to mistake the oriental submissiveness under defeat for ignorance or antagonism, too apt to be impatient or overbearing. Not infrequently did our personnel make the two mistakes which are most serious in the Far East—"blowing their tops" under some frustrating circumstance, and in being ostentatiously friendly in order to demonstrate a democratic attitude. The Japanese code for human conduct, known as "face," was one phase of Japanese life which gave all agencies of the occupation considerable trouble. For generations the Japanese have been disciplined to say, to believe, and to do what their rigid code states to be correct, or proper, under almost any eventuality. Thus it was correct to worship the Emperor, defer to elders, and to do what was ordered by proper authority without any question. The majority of Japanese live their lives under this restrictive code. To disregard or disobey the code is unthinkable, and to uphold it is a matter of pride.

Not only was this ethical code not well understood by occupational personnel, but many aspects of it appeared illogical from a Western point of view. For example, if a Japanese is expected to know a certain thing, it is considered bad form, or "loss of face," for him to admit that he does not know what is expected of him.

Invariably, a Japanese would agree with you, or say what you expected him to say, if it appeared to him that in so doing he was being "correct." Interpreters for military government often were likely to translate what they thought you wanted to hear, and this was a serious thing. Another example, frequently encountered by military government teams, was the reluctance to start a project by a Japanese official, or agent, because he was afraid to acknowledge he did not understand what was desired. It explains, in part, the resistance to anything "foreign" since a Japanese does not, or rather is expected not to, admit to inferiority.

Many foreigners experienced the superficial manifestations of the code in their daily contacts with the Japanese, but had little appreciation of the extent to which it reached into and influenced all phases of Japanese life. Military government was in constant struggle with it, and it unquestionably was a block to the introduction of democratic ways. Yet, oddly enough, because of its very instance upon obedience to authority without question, the code facilitated the ends of the occupation many times.

For example, the Japanese had sworn to fight to the death and never surrender, but when the Emperor proclaimed no further resistance, the fighting ended almost instantly and completely. So this age-old discipline of the Japanese enabled the occupation to inaugurate and to effect many reforms with less delay and difficulty than might otherwise have been the case.

However, no matter in which direction it operated—for or against the occupation—this code was definitely a significant factor—particularly the "face saving" portion of it.

Duties and Problems

It is appropriate to discuss the duties and problems of the various military government sections omitting details of administration and such functions normally understood as applicable to each section.

Command

The Command Section concerned itself mainly with major problems of the team, and determined local policies for the team within the authority granted by SCAP. It dealt primarily with the top level Japanese officials in governmental and business affairs in its area. As has been mentioned previously, the headquarters of a military government team could "recommend" action, but could not initiate any projects, or undertake direct disciplinary measures.

Legal and Government

The Legal and Government Section had one of the most difficult assignments, since in its field lay politics, courts, police, penal institutions, autonomy, and similar activities in which the occupation wished to effect changes and reform along democratic lines. There was much to combat and the section was presented with a tremendous educational and directional task.

For example, autonomy in any form was a new venture and contrary to all prior Japanese experience. Discrimination had been widespread in national and local affairs.

Free elections required indoctrination and supervision. Radical elements took advantage of the overencouraged labor unions to foment trouble.

The Legal and Government Section was charged with suppressing any resurgence of ultranationalism whether it was militaristic, social, or religious in nature. Most of the changes, or reforms, which the occupation wished to make in the established Japanese form of national and local government, met with what T. A. Bisson described as "negative sabotage" in his book *Prospects for Democracy in Japan*. We would call it the "slow down." In general, this was "face" operating to protect the Japanese way of doing things.

To persuade the Japanese to recognize, to accept, and to exercise the principles of self-government in all its many phases required endless prodding, encouragement, inspection, conference, and great patience coupled with sound, calm judgment. It was a job of check and double check. The Japanese for too many generations left government to the "Emperor's officials" or those "in authority" for them to easily comprehend a government *by* the people. The nearest thing to that concept was in family rule where the elders were consulted in family affairs.

SCAP, recognizing that in its mission

there might very well occur extraordinary circumstances in which action was necessary without waiting for advice from higher authority, granted legal and government sections that prerogative. In such situations sound, calm judgments are essential.

Finance and Taxes

The Finance and Tax Section had an extensive and detailed assignment, but it was not nearly as difficult as that of other sections. The occupation, in its endeavors to balance finances and to equalize taxation, had the approval of the majority of Japanese people. They were all too familiar with taxation, and the discriminatory distribution of funds by the central government. Much of the section's work affected individuals, and most people are quick to understand personal benefit.

Economic

The Economic Section was confronted with many problems in many activities. The Economic Section was charged with aiding in the production and distribution of food products, as well as with the surveillance of mining, forestation, communications, heavy industries, public and private utilities, big business, all the various small businesses, mills, and the many factories and commercial enterprises of Japan. It was a gigantic task of regulation and inspection. There was the special assignment of the disbandment of the Zaibatsu and similar monopolistic combines of big business in an endeavor to promote a more equal distribution of wealth and opportunity in conformity with democratic principles. Labor saving methods and equipment had to be adjusted to the problems of unemployment and relief. There were decisions to be made in connection with export and import business. The foregoing delineation does not pretend to enumerate all of the responsibilities of the economic sections in military government, but it should give some idea of the size of their task.

For this task the economic sections had, in proportion, fewer members than any other section. Moreover, better brains with far more experience in the Far East than were available to the military government economic sections found themselves baffled by the Japanese economic situation following World War II. Many "expert consultants," brought to Japan to assist in the complex economics of the country, failed because they tried to introduce new equipment, or new methods too fast and too soon. The oriental cannot be hurried. "Face" must be considered. You must give him time to accept the new idea which is of "foreign" origin and give him a reason for it. When the oriental is pushed too hard, he becomes confused.

American methods in business, commerce, industry, agriculture, and mining were, for the most part, different from the ways of the Japanese. Military government had to keep that fact in mind and also the fact that the oriental is suspicious of Western ways, because the oriental has been exploited by Western powers too often and for too long to be expected to accept Western ideas without suspicion.

In the long run, military government economic sections gained the respect of the Japanese by their genuine interest in the welfare of the Japanese business men, farmers, and fishermen. They recognized the desire on the part of the occupation to be helpful and to show a way to profit by adopting democratic policies.

Information and Education

The Information and Education Section had a more responsive field in which to work. The Japanese are eager readers, good students, and pay great respect to the informed and educated individual. However, education and the press had been rigidly controlled in the interests of the central government. There had been

no "free press" or liberal curriculum in the schools as in the United States. When the occupation removed restrictions upon the expression of public opinion—within reason—and expanded the subject matter taught in schools, the Japanese reaction was favorable. Before that time there had been press reports colored to conform with the views of the central government, and ultranationalism had been stressed. There had been no coeducation. There had been no libraries with extensive and *impartial* material for the use of the public.

It was the duty of the Information and Education Section to see that the press, the radio, and all publications carried no opinions hostile to the occupational objectives and that the people received a factual report on world affairs. The theater was checked to see that it did not violate SCAP directives and motion pictures were likewise censored. In short, the task of the Information and Education Section was one of the most important. The keystone of progress and of civilization is—information and education.

Welfare

The Welfare Section experienced considerable difficulty with rock-set customs and traditions. It dealt with relief—and relief to a Japanese is something to be avoided at all costs. According to their code anyone accepting relief is placed under obligation—which to a Japanese is humiliating. For example, the Japanese do not understand the gifts from CARE or even the funds provided by the United States to aid in the economic recovery of their country. Relief to them means charity, charity implies obligation, and obligation entails loss of "face." While the philosophy is not exactly peculiar to the Orient, it is far more important to them. As one cosmopolitan Japanese explained it—"The Japanese do not like to be put in the position of beggars, either as individuals or as a nation." And it is no exaggeration to state that a daughter is less blamed for venturing into prostitution than becoming the recipient of relief!

In a devastated country, war-torn and short of necessities, there was a fertile field for welfare work. The results were immediately evident and individually appreciated. The welfare sections distributed clothing, bedding, and provided aid to the aged and infirm. It established nurseries and playgrounds, youth centers and similar facilities for children.

Natural disasters like fire, flood, and earthquake received prompt and generous attention. Americans often risked their own lives to save Japanese lives. Military government and other agencies contributed on-the-spot aid in money, food, shelter, and medical service. There was no discrimination. These things the Japanese saw at first hand and understood far better than any lecture about democracy.

A powerful appeal to the Japanese lay in almost anything which concerned their children. The affectionate attitude of the Americans toward children had a tremendous impact upon the Japanese who adore their children. For example, if a member of the Welfare Section told a Japanese "this is for the good of your children and will prove valuable later in their lives," he was almost assured of success even after other measures failed. Military government knew this and always looked for a way in which to employ it. The Welfare Section put across the ideals of equality, fair play, and humaneness. Before the occupation, the mass of the Japanese people had not been accustomed to sharing in what little relief, welfare, or medical service had been provided. There can be no question about the contribution made by the welfare sections of military government in the furtherance of democracy in Japan.

Public Health

The Public Health Section accomplished results which were truly remarkable under terrific handicaps. The war caused an exhaustion of medical stocks and equipment. And the war, too, had resulted in retarding medical science by shutting off contact with the outside. Doctors and hospital facilities were neither sufficient nor adequate to meet the needs of the people. Public clinics existed in some of the larger communities but they were not up to modern standards. In rural districts the situation was worse. Many old people still clung to the belief that "spirits" spread and caused disease. The few hospitals were understaffed, undersupplied, and unable to accommodate all the patients requiring beds.

In Japan, nurses had no standing professionally or socially. They were little more than servants to the doctors. Their training was nominal, and the inducements to become a nurse were almost nonexistent. In Japan, hospitals do not provide food or space for visitors in spite of the fact that the family of a patient brought food to him and usually cooked it right in the ward on a charcoal burner. This causes considerable confusion. If children cannot be left at home, they are brought along and they add to the confusion.

The occupation changed much of this. Nurses were given their proper place and respect. As fast as reconstruction permitted, provision was made to feed those hospitalized, and to provide waiting rooms for visitors and children. Personal habits contrary to Western conceptions of good hygiene were corrected through instruction. For example, contagion and contamination were not well understood by the majority of Japanese people and, as a result, vermin and other types of disease carriers flourished. Refuse and garbage required attention to help prevent the spread of disease. Supplies were replenished and equipment procured.

Under normal conditions, the task facing the occupation would have been Gargantuan. However, the war superimposed upon normal conditions the rapid demobilization of the Japanese armed forces, and shortly after that the return of thousands of prisoners of war. Hundreds of the latter were in immediate need of hospitalization, or at least medical attention. The "out patient" treatments jumped to astronomical figures.

The military government public health people worked with amazing patience and endurance. They inspected, trained, pleaded, scolded, and actually performed operations.

They gave of their free time. Their self-sacrifice in an effort to straighten out the situation was admirable, to put it mildy. Once more the results were tangible, personal, and immediately evident, and again the avoidance of discrimination was gratifying in its effect upon the people.

Veterinary

The Veterinary Section was more or less a subsection of public health and many military government teams did not have one. Where there was a veterinarian, his problem was largely that of instructing in techniques, and the strict enforcing of sanitary and preventive measures. The handling of indigenous milk and milk products, fish, meats, and their shipment required constant surveillance. Transportation was slow and refrigeration was inadequate which meant spoilage unless all precautions were observed. The cleanliness of personnel and equipment had to be checked rigidly.

Negligence, rather than ignorance, was the problem for the veterinarian. It should be noted also that the Japanese are more considerate of their domestic animals than most orientals.

Sanitation

The Sanitation Section was badly overworked. Often it was a one-man section. Inspection and education constituted the principal problems. During the war much equipment had been worn out and its replacement was difficult. Modern plumbing was lacking to begin with and what little there was needed repair and renewal. Sewage and water supply required immediate attention.

The sanitation sections spent an appreciable amount of time and effort trying to break old habits and to impart fundamental knowledge concerning personal and community hygiene. In the rural districts particularly, garbage disposal was quite haphazard. Filth was permitted to collect and then was left. Wells were located frequently adjacent to toilet facilities. Such conditions promoted dysentery, fever, and the propagation of disease carriers. Breaks in the overtaxed water mains invited contamination. Many of these conditions were problems for both the Public Health and the Sanitation Sections.

The task was a continuing process of education. For example, there was the regulation of night soil—the farmer who lived upstream, used the stream for cooking, drinking, washing, and toilet without concern or understanding of what he was doing to his neighbor downstream. There was uncovered food in sidewalk stalls, common drinking cups, carelessness in eating establishments as to the proper washing of cooking utensils, and often there were dirty, even infected, food handlers. All these were matters for constant inspection, follow-up, and continuous education.

In many cases, it was difficult to get officials to initiate corrective action where new ideas and methods were involved. The officials would listen to arguments for improvement, and then find excuses, or just fail to do anything. It is true that lack of funds was often a stumbling block. Sanitation was rather far down on the list of fund allocations.

Demonstrations and campaigns were conducted in schools, at civic and social functions, and these efforts accomplished gratifying results. Urban communities responded more quickly since the needs and benefits of good sanitation were more apparent where people live together in close quarters. The reasoning of "for the good of everybody" was effective and manifest.

Transportation and Accommodations

Much valuable time was spent in getting from one place to another. While the Japanese trains provided the most satisfactory method of traveling, they lacked diners, pullmans, reclining chairs, and other comfort aids in Hokkaido.

Motor travel was restricted to the large metropolitan areas where there were reasonably good roads. However, even in these areas, there was frequently insufficient official transportation available to meet the requirements and as a result military government personnel were often placed in the embarrassing position of having to depend on borrowed Japanese vehicles. The borrowed vehicles were worn out and in very bad condition and as a result were very unreliable. In some of the outlying areas in Hokkaido, jeeps were carried on high speed flatcars, attached to trains, between communities.

Military government personnel had to adjust themselves to Japanese food and lodging during their inspection trips to the rural communities, and it is not surprising that some of the more sensitive stomachs were upset. Heating and lighting facilities varied from inadequate to the point of nonexistence. Such conditions did not facilitate work in the field, or rest, or the writing of on-the-spot reports.

The conduct of affairs by mail and telephone was most frustrating because of the enforced delays and irregularities.

Often interpretation was required in telephone conversations, and this method of handling technical matters was highly unsatisfactory. It has already been mentioned that efficient interpretation was not always available, and how important that fact was to the success of all activities in military government.

There were a number of factors which had to be considered in the conduct of military government affairs. Some of them might seem minor to one not thoroughly familiar with the Far East. For example, personal conduct had to be above reproach. Once an individual became guilty of indiscreet or reprehensible action, that individual's usefulness to the military government team was destroyed. Favoritism had to be guarded against, and the Japanese are adroit at placing one under obligation. The custom of giving and receiving presents is carried to an extreme in the Orient. Military government people had to be very careful not to give offense in refusing gifts. Military government personnel had to acquaint themselves with what was proper and polite from the Japanese point of view. All these little things were of value in maintaining the prestige not only of the individual but of the United States.

Probably the most severe test for military government came in 1949, when General MacArthur started to relax controls and to turn over to the Japanese, with the least practical delay, the running of their civil government. As this was done, the military government teams were reduced in number and in personnel. Much of their supervisory control was removed. The volume of work required was necessarily diminished and in some instances eliminated. Spot surveillance, supplemented by written reports, was about all the curtailed personnel was able to handle. Suggestion and persuasion were employed by military government personnel. Appeal was made to individual, local, and national pride. Tact and indirect approval or disapproval was employed. It is worthy of note that there was no letdown on the part of military government personnel. Indeed, throughout the occupation, the people in military government exhibited superior qualities of devotion and self-sacrifice in their assignments. They gave of their free time, and often of their personal funds, in the interests and welfare of the Japanese. This attitude was understood by the Japanese and unquestionably made friends for democracy.

The Japanese authorities were definitely alarmed by the rather unexpected move to give them back the management of their affairs so soon. Governors and lesser officials unaccustomed to acting without full sanction from Tokyo feared the oriental stigma of disgrace and shame if they failed to meet the new demands of local autonomy. They protested vigorously, and pleaded for the retention of Americans in uniform to provide moral support. And shortly after, when occupational troops were sent to Korea, these officials actually expected mob violence with jeopardy to their positions.

Negative Sabotage

At this time "negative sabotage" became increasingly evident. It had been noted prior to this time in connection with many attempts by the occupation to change the existing structures of power, privilege, and status. Time and again Japanese officials would explain to military government that their inaction was caused by "no word from Tokyo." Time after time military government was asked, "What do you want me to do?" But military government had instructions to require the Japanese to recognize and exercise their responsibilities. Gradually the more enterprising and venturesome Japanese leaders took hold, and by their example brought others into action. The over-all results were such that General MacArthur made good his prediction of

an early peace treaty sooner than had been anticipated.

Military government in Hokkaido worked very closely with the occupational troop commanders and with the State Department representatives. The vice-consul was more or less dependent upon military government for administrative help, transportation, and for mail when his office was first established on Hokkaido. And in all legal matters, the two agencies were jointly interested and helpful. Not all teams had this association.

Despite mistakes—and mistakes there had to be—it was an occupation without parallel. What is likely to endure from military government's efforts to establish democratic principles is difficult to say. Military government was many times at a loss to know what was accepted honestly, or what was merely tolerated by a conquered people because they believed it was the thing to do. However, in its work for the children, and in its help to bring freedom into the lives of the women, military government did feel that lasting results were obtained. Military government people are of the considered opinion that only a few of the "old line" Japanese—45 years of age or older—will adhere to the new ways, nor would it surprise these same military government people if the older generation actively combated the new ways. Life for them has crystalized and their allotted time is running short. But in the case of the younger generation, there is believed to be promise.

It is too early, now, to sum up the effects of our occupation, however, our hopeful expectations are that:

1. Emperor worship and feudalistic government is ended.
2. Land reform will be retained.
3. Free elections will prevail.
4. Labor relations will improve.
5. Education will expand and be more liberal.
6. Women will retain their franchise.
7. Freedom of the press, radio, speech, religion, and assembly will survive.
8. Monopolistic tendencies will be suppressed.
9. Regimentation will cease.
10. Discrimination will be eradicated.
11. Self-determination and individualism will grow.
12. The reasonable citizens of Japan will demand that their country establish itself as a peaceful and responsible nation, willing to abide by the fundamental human rights professed by other free nations to the end that Japan may become a respected member of that family of nations.

We can no longer afford to prepare for every conceivable kind of war. We can no longer afford the luxury of the "status quo" in strategic planning. The day has passed when we can accept less than the most effective and efficient logistic supply and organization. Such an approach will require many courageous decisions, but it appears to me to contain all the elements of wisdom.

Deputy Secretary of Defense Roger M. Kyes

CHANGES INSIDE THE PENTAGON

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THERE have been radical changes inside the Pentagon following the report of the Rockefeller Committee, appointed in March 1953 by Secretary of Defense, Charles E. Wilson, to study the organization of the Department of Defense, and consisting of: Nelson A. Rockefeller (Chairman), General Omar N. Bradley, Arthur S. Flemming, Vannevar Bush, Robert A. Lovett, Milton S. Eisenhower, and David Sarnoff.

The Secretary of Defense under the President is now firmly established as the top boss in fact as well as in theory. The Secretary of Defense, assisted by a carefully selected staff, is for the first time in a position to do an intelligent job of supervising, co-ordinating, and controlling the entire Department. Operations have been decentralized and delegated downward to the three military departments. Lines of command are being made clearer and simpler. The three military departments and their Secretaries have been raised in prestige, and at last the Secretaries have adequate power to operate and direct their departments. Modern business practices, as distinguished from governmental formalism and bureaucracy, are in the ascendency.

Decentralized Operations

American business has been most successful in decentralizing operations. Business leaders have known for some time that there is no inconsistency between a concentration of authority and a decentralization of operations. As a matter of fact, intelligent decentralization of operations is possible only under a top authority with sufficient power to delegate downward. Decentralization must come from the top. It can never be passed upward. To the new Department of Defense leaders, these business principles seemed sufficiently tested to merit a trial in the largest executive department in the government—the largest employer of personnel and the largest buying organization in the world.

Degree of Complexity

The Department of Defense, however, differs from business in size, objectives, and controls. It is just as large and complex as it has been pictured. Geographically, its operations sprawl over the world. Politically and economically, it affects and in turn is affected by, almost every phase of our national day-to-day life. The sums of money spent, the items of matériel purchased, and the numbers of activities supervised are astronomical.

There exists continuously a struggle between new ideas and the dead hands of tradition and habit. Furthermore, the officials must do their work without the customary efficiency controls of a balance sheet and an annual profit and loss statement. The objectives are security for the nation and effective military strength for application when, as, and if needed—rather than economy for its own sake.

The operations of the Department of Defense are as difficult to comprehend as they are to control. The businessman

who seeks to understand will, therefore, need some guidelines. Primarily, it is important to identify the basic concepts or foundation stones without which no effective Department of Defense can be built, and then to see the choices that must be made once these fundamentals have been identified.

The purpose of this article is to explain the choices made by the Rockefeller Committee in line with the basic principles that it envisaged, and then to take the reader "inside" the Pentagon from 1947 to date. The faults of the first so-called "Unification" of 1947 will be traced through the appeals for more law by the late Secretary Forrestal in 1949, and the effects of the unwillingness of Congress to go all the way with him. Then, the 1953 recommendations of the Rockefeller Committee will be briefly laid alongside both the basic concepts and the failures of 1947 and 1949.

Basic Philosophy

Approaching the problem in this manner requires the appreciation of some starting points. First, there is no organizational structure so bad that men of outstanding genius and loyalty cannot make it work with some degree of efficiency. However, such a truism should not lead to acceptance of sloppy and ineffective organization. Second, sound organization aids men of genius to perform miracles and average men to achieve success. This corollary proposition is even more true. Finding the key to a sound organization is worth all the effort it costs.

The need for a basic organizational philosophy should be obvious. There is a tendency to rush into the middle of a governmental organizational problem and to focus attention on the minor matters which are most noticeable. Too often the squeaking wheels are greased without anyone noticing that, in fact, the whole chassis is out of line.

The fundamental principles, which must be identified and appreciated before any start can be made on the organization chart, are:

Civilian control may be of two kinds—active or passive—and each kind requires an entirely different type of organizational structure.

Military decisions cannot be separated from civilian decisions.

Civilian Control

Like *virtue*, everyone is in favor of *civilian control*. It is traditional, democratic, and basic. Indeed, the principle is so firmly imbedded in our governmental philosophy that any given military organization must be described as subject to civilian control even if the opposite is the case. Yet what does civilian control mean? The truth is: every man has his own idea as to the proper meaning and hence a different theory about the proper structure for the Department of Defense. For our purposes the many shades of meaning can be grouped under the two headings: *the passive concept* and *the active concept*.

So the fundamental question is: which kind of civilian control do we want? Once that decision is made, the organizational chart will then become relatively simple.

The tendency toward centralization in the Department of Defense has been ended. We now can offer positions of prestige and effectiveness to military and civilian leaders in industry, labor, and the professions

The Passive Concept

Under the passive concept, while civilians do hold the highest positions and *influence*, the military really control. A few civilians at the top have the *power* to

decide; they outrank all military officers and can, if they so desire, take command. But it is deemed irrelevant whether they *actually do decide* as long as the civilian signature is the final word. Since these civilians are more interested in knowing what has been decided than to have the data needed to make decisions, the fact that all the information they receive comes through a single military channel makes no difference.

Such a system cannot work without a military chief to sit in the center of the web—immediately below the civilians but above all the others. Through this single military commander all information passes up and all orders pass down. The military chief must and does *run* the Department. The civilian Secretaries are thus more like a board of directors than top executives.

The late Secretary Patterson believed in —or at least accepted and argued for— the passive concept. Similarly, former Assistant Secretary of War John J. McCloy, testifying on 23 November 1945 before the Senate Committee on Military Affairs, indicated acceptance of a passive role for the top civilians (although he did show an awareness of the need for "checking the accuracy and the soundness of the judgments based upon" a single source of information):

. . . The fact that there is a Chief of Staff with full authority in the military sphere gives the Secretary great advantages in his exercise of control. It gives him . . .

A single responsible source of information. . . .

. . . An executive with authority adequate to carry out decisions.

Depending on the force and industry of the top civilians involved, the passive concept produces concentration by the Secretaries on the character and ability of their military executives. Once the Secretaries are satisfied in that respect, they tend to work on the special problems referred to them by their military executives rather than on the over-all day-to-day administrative job.

This does not mean that Secretaries operating under the passive theory sign every piece of paper before them—but the odds are definitely slanted toward their doing so unless the inherent defect is so obvious that it appears on the face of the paper.

The passive concept of civilian control is a workable approach. During World War II, the War Department operated substantially in accordance with the passive theory, and no one denies that it operated well.

This explains why all the World War II Department Secretaries testified in favor of the original Collins' plan—which was centered on a single military commander with full authority over all service activities. The civilians, a Secretary and Under Secretary of National Defense, a few Assistant Secretaries of National Defense for functional purposes, were to be clustered at the top, entirely dependent on the over-all military commander for information and the execution of orders. There were to be no civilian Secretaries in the military departments. Each service was to have a military chief answerable to the top

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Mr. H. Struve Hensel, recently appointed Assistant Defense Secretary for International Security, has had varied defense assignments in Washington, D. C. He was made General Counsel of the Navy in 1944 after organizing the Procurement Legal Division in 1941. From January 1945 to March 1946, he served as Assistant Secretary of the Navy. He served a period as Special Assistant to the Secretary of Defense as an advisor to the Rockefeller Committee, and was made General Counsel of the Department of Defense in July 1953. He was admitted to the New York Bar in 1925 and to the District of Columbia Bar in 1943.

military executive. It was a perfect blueprint of the passive concept.

The Active Concept

On the other hand, the active concept is that—if they really wish to control—civilians must participate actively in the daily business of the Department. They must have not only the power to decide but also the ability to decide *independently and intelligently*—that is, on the basis of thoroughly informed judgment. There is no place under this concept for a single military commander with power to *run* the Department. The civilian Secretary does the *running*, and any military head is only *one* of several top advisors and consultants.

The late Secretary Forrestal, Patterson's opposite number in the Navy Department, believed in the active concept. Forrestal's organization of the Navy Department in World War II was completely different from that of the War Department. In fact, it was closely akin to the subsequent proposals of the Rockefeller Committee.

Secretary Forrestal *ran* the Navy Department. He was not satisfied with a single source of information—military or civilian. He did not want to be forced to approve any action or make any decision in cases where he did not feel he had adequate information and full knowledge of the advantages and disadvantages. Secretary Forrestal was particularly upset by memoranda which presented only one side. Memoranda, which by their inherent bias or by strings of initials, indicated that they had been considered by only one group and were referred by him to some other staff group for analysis.

Even military estimates of the matériel support of the forces in the field were subjected to civilian scrutiny. To exercise his control over these military estimates of requirements, Secretary Forrestal established a Requirements Review Committee of which the chairman was the civilian Assistant Secretary and the other two members were the Vice Chief of Naval Operations and the Chief of Naval Matériel. This committee, assisted by a staff of some 60 reserve officers and civilians, reviewed in great detail the Navy logistical program. They questioned not only purely business matters, but also predominantly operational matters, such as requisitions from combat area commanders, training programs, advance-base warehouse capacities, ammunition expenditure rates, and the like.

In short, civilian control meant something active and forceful to Secretary Forrestal. He could not have worked under the passive concept. He would have agreed with former Secretary of the Army Gordon Gray (in the postwar period), who said in a memorandum complaining about the passive civilian control in his Department:

If a Secretary delegates his command authority to his Chief of Staff and relies upon the fact that the Chief of Staff is thus "responsible" to him, such a Secretary has thereby failed to fulfill his duty to exercise control. . . . It was not intended that this supervision take the form of merely last minute pro forma *policy decision already made by subordinate echelons within the Department.*

Secretary Gray foreshadowed later developments also when he pointed out in the same memorandum:

In Secretary Root's day the necessary civilian supervision over the small department . . . could doubtless be adequately performed by the Secretary himself (aided by the single Assistant Secretary then available to him). Today it is obvious that the Secretary cannot physically do this. He must be aided by a group of civilian assistants. . . . Uninformed direction is certainly not adequate direction.

Secretary Gray was obviously not satisfied with anything short of active participation in departmental management. Whereas Patterson and McCloy had to have someone else to supervise and direct on a daily basis—the top authority of course being the military Chief of Staff—this was to Secretary Gray a failure "to fulfill his duty to exercise control."

Rockefeller Committee Choice

It is readily apparent why a choice must be made between these two concepts of civilian control. They are miles apart in philosophy, principle, and implementation. They demand quite different types of personnel in the key positions. Imagine trying to adjust a Forrestal to a War Department civilian position; it would have ended in his complete frustration and uselessness as a Secretary. And just as civilian control cannot be part active and part passive, organizations must follow one pattern or the other.

The Rockefeller Committee frankly recognized the need for choosing between these two alternatives. It adopted the active concept, and its recommendations were built firmly and consciously on that foundation. However, the choice was not an easy one and it was made only after careful consideration of both sides.

Counterarguments

There remained then, in early 1953, just as there still remains, a forceful body of thought in favor of the passive concept. It is a workable approach—or at least it has worked in the past. It offers an antidote for the weak civilian Secretary. It also offers some cure for the lack of continuity in these civilian offices—for example, five Secretaries of Defense in 7 years. It has considerable appeal to many in the career military service.

These arguments in favor of passive civilian control were presented to the Rockefeller Committee by a number of witnesses; ex-Secretary McCloy reaffirmed his stand; and the case against the concept of active civilian control was summarized in a military study presented to the Committee, as follows:

The direct command of military forces in the field would devolve upon an appointive civilian official, who, having neither the personal wealth of military experience nor the continuity in office of the Joint Chiefs of Staff, would be tragically handicapped in the discharge of this awesome and personalized responsibility for decision.

Note that the important activity of the top executive is described as "direct command of military forces in the field," and that the basic ingredients of decision are catalogued as "personal wealth of military experience" and "continuity in office."

The fact remains, however, that there is much more to war than the military command of forces in the field. Indeed, a major disadvantage of the passive concept of civilian control lies in its probable unsuitability for any future war. Strategic over-all decisions, the development of new weapons, industrial mobilization, relations with allies, arousing the moral support of the allied peoples, support of civilian populations, extension of supply lines, and matériel distribution—to name a few important problem areas—involve a spectrum of knowledge and experience not usually available in any single profession, particularly not in the military profession.

It may be an oversimplification to state that victory in World War II was due to big factories rather than the big forces in the field or the strategic manipulation of those forces. But there is enough truth in the statement to demonstrate that modern warfare requires a weighing of factors and a bundle of skills not solely —and perhaps not normally—within the experience and knowledge of the profes-

sional military man—or any other kind of professional expert. Top-level decisions in war must be based also on the experience and knowledge of the scientist, the engineer, the production expert, the transportation expert, the psychologist, the fiscal expert, and even the lawyer.

Need for Generalists

Not only is there much more to war than any single specialist skill; it is also clear that all the necessary specialized knowledge and experience must be blended into a single decision by *generalists* rather than by *specialists*. And the expressions of specialist opinion must flow to the generalists unimpeded by any military or other specialist filters.

The favorite justification for having a specialist as top executive is the assumption that, unless he has a "personal wealth of military experience" and "continuity in office," a person will not be capable of interpreting wartime situations or of making the proper decisions. Yet, commercial and industrial experience has indicated that it is far more satisfactory for the top executive to be a generalist.

There is no contrary experience in the military departments, in war or in peace. The passive concept worked in World War II because the top military leader in the War Department—General of the Army George C. Marshall—happened to be an outstanding general executive. It is not safe, however, to depend upon general administrators coming to the military top.

It did not happen in the Navy Department, although the wartime Chief of Naval Operations, Fleet Admiral Ernest J. King, was one of the greatest global strategists of all time.

Men with a "personal wealth of military experience" are in the main specialists. While there are exceptions, specialists do not generally develop into generalists. This comment is not pointed solely at military men.

Accountants and lawyers are also specialists who, as a rule, make poor top executives, the exceptions being so few that they prove the rule. Furthermore, military men are seldom developed for over-all executive direction; rather, promotion to top military rank often depends on proficiency in a well-defined special field.

There is such a professional as an "executive generalist." This type of man is far more effective in the top executive position than is the specialist because he not only develops more objective qualities of mind, but also has more skill in weighing diverse factors and coming to a conclusion on the basis of the several specialist points of view. The generalist can and should be appointed to the top executive position. He will usually be found in civilian life.

The advantages of continuity in office are, of course, obvious. Lack of continuity has plagued all top governmental administration; it is not confined to civilians. Military men are, unfortunately, too often subject to a definite program of rotation which is totally inconsistent with continuity. In neither case, however, can continuity be produced by an organizational chart. It depends on the individuals and their inducements to stay in office.

As for the danger of weak civilian Secretaries, the Committee felt that the President could and should avoid that. So, while fully cognizant of the counter-arguments, it felt they were strongly outweighed by the advantages of the active concept.

Military Decisions

In addition to favoring the active concept of civilian control, the Rockefeller Committee came to one more fundamental conclusion. It rejected the theory that military matters and civilian matters can be kept separate and distinct and handled in dual lines of command which meet only at the very top. The Committee felt that

departmental decisions had to be made as a unit—military, civilian, and all other specialized considerations being blended into a single Departmental program or decision.

In the days of hand-to-hand combat, and perhaps for a few generations thereafter, there may have been decisions purely military in character. But that restricted approach to war became unrealistic many years ago. The only thing that has kept this fact from showing up is that military education and training expanded to cover many pursuits which previously had been considered civilian—for example, transportation, engineering, science, production management, purchase and distribution of supplies, warehousing, construction, and the like. But war expanded even faster.

Today, with the revolutionary advances of science and with the spread of war to entire populations, the characterization of any decision as purely military, except possibly a decision made immediately before or during combat, is simply shadow boxing. Practically all so-called military decisions—particularly those reached at departmental levels—involve some application of skill and knowledge found just as often in the civilian as in the military man. Atomic and thermonuclear weapons are examples of scientific contribution to actual combat operations.

Furthermore, war is ony a means to a political end, and to permit decisions in war to be made solely by military men often wins the war by destroying the political objective—what is generally called "losing the peace," although actually it is produced by the way in which the war is fought. All wars are regrettable, but wars which destroy their original objectives are doubly undesirable.

There is an equally significant corollary to the proposition that no decisions are "purely military in character." No decisions are "purely civilian in character" either, except possibly the purchase of passenger automobiles and office equipment for headquarters within the continental United States. Even those exceptions are questionable.

The recognition of these two propositions points logically to two conclusions: no organizational structure can be erected on the assumption that military matters can be handled under one arrangement and one line of command, and civilian matters or departmental affairs under a different arrangement and a different line of command; and that the final decisions which must receive major consideration at the military departmental level—particularly including those in the broad strategic field—can be made only after an integration of military and civilian knowledge and experience.

Tracing the Reorganization

Now, with the background, let us take a look at the way the various reorganizational moves of the past 7 years have led up to the implementation of the Rockefeller Committee's recommendations.

National Security Act (1947)

In a pioneering experiment, the National Security Act of 1947 split the War Department into two separate departments—Army and Air Force. The Army and the Air Force continued to follow the passive concept of civilian control as developed in the War Department. The Navy continued under the Forrestal philosophy of active control. The resulting three departments—Army, Navy, and Air Force—were loosely combined into the National Military Establishment to be headed by a Secretary of Defense. This top Secretary was furnished with three special civilian assistants—not Assistant Secretaries of Defense—and with three statutory staff organizations:

The *Munitions Board* was to operate according to rigid statutory direction in the

fields of procurement, production, and supply.

The *Research and Development Board*, under a similarly rigid charter, was to operate in the area described by its name.

The *Joint Chiefs of Staff* were to be the military planning board for both the President and the Secretary of Defense, and, in addition, were to be given a rather vaguely defined responsibility with respect to "unified commands in strategic areas."

The three military departments were given separate administrative command structures under their own civilian Secretaries, who had the right of appeal directly to the President and to the Bureau of the Budget. These military Secretaries were also assigned all powers and duties not specifically conferred on the Secretary of Defense. The Secretary of Defense had no power to appoint civilian personnel in any of the military departments.

The germs of ineffectiveness and confusion were inherent in the 1947 organizational structure. Civilian control of the military establishment on an over-all basis was hopelessly diluted. Debating the power of the Secretary of Defense became a major pastime in the Pentagon. He had *general control*, but the military departments were to be *separately administered* and were to possess all powers not specifically conferred on the Secretary of Defense. The active concept under such circumstances could not be followed; the Secretary was left without adequate informational sources to make intelligent decisions. The passive concept was just as impossible; there was no top military commander, and the individual military departments were part free and part subordinate—no one was clear just how.

Two parallel lines of command appeared. Consistent with the principles of geometry, those lines never met. Decisions stayed just as far apart. In the planning field, the Joint Chiefs of Staff were unable to free themselves from the points of view of their particular service and were split three ways, incapable of movement or stability. The statutory boards—Munitions, and Research and Development—were not able, as a practical matter, to formulate substantive policies, so they turned to issuing "procedures." As such procedures grew more and more definite, they became detailed prescriptions of operating methods. Operations and operating personnel began to appear in the Office of the Secretary of Defense.

Key West Agreement (1948)

As stalemate and confusion increased, the Joint Chiefs of Staff—who had been delegated certain command functions during the war—now undoubtedly influenced by that background, sought to fill the vacuum created by the limitations on the authority of their directing head and began to neglect their fundamental objective of broad strategic planning.

In assuming more and more command, the Joint Chiefs of Staff were aided by the Key West Agreement of 21 April 1948. This so-called agreement was really an order by the Secretary of Defense—approved by the President—which, in addition to defining the roles and missions of the three military services, permitted the Joint Chiefs of Staff to appoint one of their members as the effective commander of a designated unified command in a strategic area (anywhere outside the United States). An entirely separate and distinct line of military command thus appeared which was operated to short-circuit civilian control. The marvel is not that the structure failed, but rather that it was able to continue at all.

Forrestal Proposals (1949)

We are deeply indebted to Secretary Forrestal for his decision to seek statutory relief in 1949. If he had not sought to escape from his predicament, the sys-

tem with a single military chief over all services might be with us today—that was the only alternative. Weakness in civilian control had already led to a single military commander in the War Department; here was proof enough that the most certain way to introduce the single military commander is to have civilian control fail.

Although Forrestal did not phrase his 1949 legislative proposals in terms of a particular theory of civilian control, they were obviously based on the active concept. This can be demonstrated by a very summary listing of his proposed amendments to the National Security Act. Forrestal asked Congress for:

1. Clarification, in unmistakable and ringing phrases, of the supreme authority of the Secretary of Defense.

2. Augmentation of his staff by a Deputy Secretary and three Assistant Secretaries.

3. Transfer to him of the power of appointment of the Chairmen of the two statutory boards, the Director of the Joint Staff, and all other civilian personnel down into the military departments.

4. Transfer to his office of the specific statutory functions of the Munitions Board, the Research and Development Board, and the Joint Chiefs of Staff.

5. Provision for the Secretary of Defense to have effective managerial control over budget and fiscal affairs.

Those changes can be fitted only into an active control philosophy. The fact that, in order to make the Joint Chiefs of Staff a more effective body, he proposed the appointment of a Chairman as the authoritative head of the Joint Chiefs does not conflict with this conclusion. Forrestal—like the Rockefeller Committee in 1953—had discovered that a managerial head was necessary to make the Joint Chiefs of Staff function as a planning body.

In one major respect, Forrestal did not follow his theory to its logical conclusion. He did not seem to sense fully the tendency of the Joint Chiefs of Staff to assume command functions at the expense of their planning duties. He did not suggest modification of the Key West Agreement to take all command functions from the Joint Chiefs. That remained for the Rockefeller Committee in 1953.

It is not necessary to trace the legislative history of the Forrestal proposals in the Senate and the House of Representatives. It is enough for our purpose to state that the ultimate amendments were again a compromise in which no principle was followed to its conclusion. There was considerable acceptance of the active concept of civilian control. The authority of the Secretary of Defense was clarified and strengthened by certain statutory word changes. In addition, the Secretary was made the principal assistant to the President in all matters relating to the Department of Defense. His staff was augmented by a Deputy Secretary and three Assistant Secretaries. The Secretaries of the military departments were deprived of their privilege of presenting recommendations to the President and the Budget over the head of the Secretary of Defense, although they were given the right to present such recommendations to Congress.

The Secretary was refused the right to appoint civilian personnel outside his immediate office. The authority and responsibilities of the Joint Chiefs of Staff, the Munitions Board, and the Research and Development Board were not vested in him. A nonvoting Chairman for the Joint Chiefs of Staff in much weaker form than recommended was authorized. The distinction between the Joint Chiefs of Staff as a freewheeling command body and as an advisory and planning body was never squarely faced.

The Period 1949-51

Despite the clarifying 1949 amendments, the focal points of executive ineffectiveness continued to be much the same as previously discerned by Secretary Forrestal. Except during the brief tenure of Secretary Johnson, who assumed command and made it stick, the authority of the Secretary of Defense continued to be obstructed by endless challenge and argument—particularly from the military departments. The Joint Chiefs of Staff—even with the addition of a nonvoting Chairman—remained primarily a corporate command body asserting authority superior in many fields to that of the Secretaries of the military departments; and secondarily a debating society for the airing of service views—instead of a vigorous strategic planning body—and a sort of staff organization for the Secretary of Defense which was overloaded with minor problems (for instance, expressing a "military opinion" as to how many coffee roasting plants should be operated by the Army).

One of the Joint Chiefs, in testifying before the Rockefeller Committee, flatly rejected the idea that the Joint Chiefs of Staff were planners; he insisted that they were commanders who relegated planning to a lower echelon. As the Joint Chiefs of Staff continued to concentrate on command functions, the authority of the Secretary of Defense and also of the military Secretaries weakened. The Joint Chiefs went on to consolidate a line of military command circumventing all civilians below the level of the Secretary of Defense. Clearance with even the Secretary of Defense was casual and largely after-the-fact.

The 1949 cure as modified by the practice under the Key West Agreement threatened to be almost as bad as the 1947 disease.

Lovett Proposals

As had Secretary Forrestal, Secretary of Defense Lovett recommended legislation just as his tenure ended. He felt that he had accomplished as much as possible administratively in building up the authority of the Chairmen of the statutory boards, and that the Secretary of Defense could not continue unless his authority was clearly established as supreme throughout the entire Department. He recommended a more specific legislative declaration to that effect and thus indicated that he too had come to believe in the active concept of civilian control.

Secretary Lovett was so disappointed with the neglect of strategic planning that he proposed a rather drastic reform for the Joint Chiefs of Staff. He suggested a separate military staff for the Secretary of Defense. Under such an arrangement, he felt the Joint Chiefs would return to their primary statutory duty—strategic planning. He did not, however, suggest removing the Joint Chiefs of Staff from the command functions they had assumed.

Rockefeller Committee (1953)

The report of the Rockefeller Committee presented a consistent and logical plan of reorganization. Consistent with the adoption of the active concept of civilian control, it recommended a simple line of command running directly from the Secretary of Defense to the Secretaries of the three military departments, and restriction of the Joint Chiefs of Staff to the field of planning and advice. These fundamental principles were supplemented by recommendations as to methods and practices, most of which are outside the scope of an article on organizational principles.

The President's approval of the Rockefeller Committee Report took the form of a Message to Congress and the presentation of Reorganization Plan Number 6.

The Committee Report, the Message of the President, and Reorganization Plan Number 6 must be read together to appreciate fully the approved changes. Reorganization Plan Number 6 was the most abbreviated of these documents since it was limited to the few matters which could not be accomplished without legislation. The President's Message was intended to approve the Committee Report in substance, and the fact that the President did not specifically mention each Committee recommendation has no significance.

Some important steps were taken during the course of the Committee investigation. For instance, it was soon clear that no legislative amendments were needed to strengthen the statutory provisions for the authority of the Secretary of Defense. Everything necessary had been done in 1949. It remained only to sweep away the annoying challenges of that authority made from time to time by what Secretary Lovett characterized as "legal beavers." This was accomplished by a firm and unmistakably clear opinion of the Counsel for the Rockefeller Committee and General Counsel for the Department of Defense.* This opinion was approved by the President and the Secretary of Defense and was accepted by the military Secretaries. It was followed by unmistakably clear action by the Secretary of Defense. That opinion is now the basic law of the Pentagon.

To enable the Secretary of Defense effectively and intelligently to supervise, co-ordinate, and control the entire Department, the statutory Boards with their complicated organizations and numerous employees were abolished.

Their functions were vested in the Secretary of Defense where, as staff functions, they should always have been vested. This required legislative action and is, therefore, dealt with in Reorganization Plan Number 6.

Elimination of Boards

Thus, instead of boards with rigidly defined responsibilities, a staff of six additional Secretaries and a General Counsel was given to the Secretary of Defense, making a total staff of 10 men of the Assistant-Secretary rank. Contrary to what has been frequently said, the substitution of 10 men of Assistant-Secretary rank for three Assistant Secretaries and two statutory Boards is not a "swelling" of the staff of the Secretary of Defense. Ten is, of course, a larger number than five, but a statutory Board is not comparable on a unit basis with an individual Secretary. Considering the Munitions Board as a unit, is reminiscent of the little boy's restrained request for only one Christmas present—a toy store.

The replacement of the Munitions Board by an Assistant Secretary for Supply and Logistics has already resulted in the reduction of staff personnel in that area (exclusive of the cataloguing activities) from 449 as of January 1953 to 232 as of October 1953—with a further reduction to 145 probably effective by the time this article is read.

Furthermore, the withdrawal of the Secretary's staff from operations will permit the new Assistant Secretaries, with much smaller staffs below them, to supply the Secretary of Defense with more adequate information on which to base his decisions than was ever supplied under the former, more complicated statutory Board structure.

Lines of Authority

The Secretaries of the military departments have not been submerged. They are not subject to orders from the Assistant Secretaries of Defense. They do not have to go through the Assistant Secretaries

* The author, now Assistant Defense Secretary for International Security, was at the time, General Counsel for the Department of Defense and was serving as advisor to the Rockefeller Committee.

to reach the Secretary of Defense. The channels of communication are just as simple and direct as the lines of authority:

The line of command runs directly from the Secretary of Defense through the Deputy Secretary to the individual Secretaries of the military departments. The Assistant Secretaries of Defense have no command functions. The Secretaries of the military departments have direct and ready access to the Secretary of Defense.

Most important, the management committee of the Department of Defense consists of the Secretary of Defense, the Deputy Secretary of Defense, and the three Secretaries of the military departments. These Secretaries, known as the Joint Secretaries, meet frequently. Here is the focal point of management decision for the Department. The Assistant Secretaries of Defense do not attend such meetings except by invitation. The intimacy between the Secretary of Defense and the Secretaries of the military departments has been intensified.

Questions of broad policy are considered by the Secretary of Defense with the Armed Forces Policy Council created under Section 210 of the National Security Act, which Council consists of the Joint Secretaries and the Joint Chiefs of Staff. Again, the Assistant Secretaries of Defense are not members of the Armed Forces Policy Council and attend its meetings only by invitation.

The additional Assistant Secretaries have simplified an extraordinarily complex chart of organization, have brought about a reduction in aggregate staff personnel, and have facilitated the delegation of operating authority to the Secretaries of the military departments. The Assistant Secretaries of Defense are not operators or commanders. Strange as it may seem, they are exactly what they were intended to be—top-level staff assistants to the Secretary of Defense.

The delegation of operational authority to the Secretaries of the military departments is inherent in the National Security Act and is emphasized in the Rockefeller Committee report. Under the current organizational structure and the precepts of the present Administration, it would take an internal revolution and earthquake combined to turn the tide again toward centralization.

The thought that a single channel of command is cumbersome is absurd. It stems from the erroneous assumption that every channel of communication must follow meticulously the lines of seniority in command. That is neither necessary nor desirable. The power of decision has been, and will continue to be, delegated to the operating people most fitted to decide. There is no requirement—and there will be no requirement—that papers demanding action must pass through a multitude of hands, none of which has the power or the desire to act.

Joint Chiefs of Staff

Before discussing in any detail the increased power of the Chairman of the Joint Chiefs of Staff, it is important to note that Congress—starting in 1947—intended the Joint Chiefs of Staff to be planners and not commanders. The Rockefeller Committee in turn stated that "the Joint Chiefs of Staff were established as a planning and advisory group, not to exercise command"; and accordingly recommended that the Key West Agreement "be revised to remove the command function from the Joint Chiefs of Staff, in order to enable them to work more effectively as a unified planning agency."

That revision has been effected. It has generally escaped public notice because it required no statutory change. It is the final *coup de grace* to the fear about a single military commander. The Chairman of the Joint Chiefs is thereby limited to planning along with the other Joint

Chiefs. If the Joint Chiefs do not command, no one by controlling them can seize command. He who seizes planning seizes a headache.

Thus, the expansion of the authority of the Chairman of the Joint Chiefs of Staff is limited to planning and is directed solely to expediting and making more efficient and thorough the planning activities of the Joint Chiefs of Staff and its subordinate planning group, the Joint Staff. The Chairman was not given any vote in the deliberations of the Joint Chiefs. He is not able—even if he has the inclination—to control either the decisions or the deliberations of the Joint Chiefs. Although under the statute the Chairman is responsible for providing an agenda for the meetings of the Joint Chiefs of Staff, it requires a completely undisciplined imagination to conjure up the spectre of a voteless Chairman deciding, contrary to the votes of the other Joint Chiefs, what is to be placed on the agenda and what is not to be placed on the agenda.

Under Reorganization Plan Number 6, the Chairman of the Joint Chiefs of Staff was given only two powers which he did not previously possess—the right to cause the removal of members of the Joint Staff, and the power to *manage* the Joint Staff and the Director of the Joint Staff.

Power of Removal

The Joint Staff consists of 210 officers —70 from each service—to do the necessary factual investigations and analyses upon which the Joint Chiefs will base their judgments. Members of the Joint Staff since 1949 have been appointed by the *unanimous* concurrence of all *four* members of the Joint Chiefs of Staff, including the Chairman. That condition remains absolutely unchanged.

On the other hand, since previously all *four* Joint Chiefs had to agree on removal—a most cumbersome process—the power now delegated to the Chairman to remove a member of the Joint Staff for failure to do his work or because of narrowness of vision does represent an innovation. Nevertheless, the fear that the Chairman may mold the Joint Staff to his own way of thinking simply by the power of removal assumes that he will be permitted by the President and the Secretary of Defense to remove all members of the Joint Staff except his adherents and then somehow prevent the appointment of any successors except those of his particular choosing. Such fantastic procedure is perhaps possible, but it hardly is either realistic or likely. It would require not only a supine President and a somnolent Secretary of Defense but also much more tractable military chiefs than this nation has ever seen.

Management of Joint Staff

The provision for management of the Joint Staff by the Chairman was inserted solely to make certain that the Joint Staff completed, intelligently and thoroughly, the studies and analyses assigned to it. This provision has no other significance and cannot be twisted into any other meaning. Someone must see to it that the Joint Staff does its *homework* on schedule and well; the word *manage* was selected as the most descriptive single word to express the intended meaning. If there is any vagueness in the word, the true intent is made completely definite by the Committee report, by the questions and answers in Congress, and by the established practices.

Whether the assignment to the Chairman of these day-to-day administrative duties with respect to the Joint Staff represents a *trend* toward an all-powerful single military commander is a matter of opinion or, perhaps more accurately, a matter of clairvoyance.

Undoubtedly, Secretary Root would have resented bitterly the suggestion that his

creation of a Chief of Staff of the Army would lead to passive civilian control and a single military administrative commander for that department—and yet that is exactly what happened. On the other hand, some of the most likely fears have never materialized.

No one can guarantee what will happen, but the odds are heavy against the emergence of a single military commander in the United States. The Germanic acceptance of obedience as a relief from the responsibility of decision is alien to our national character. Furthermore, the danger of a trend toward a single military commander is counterbalanced by the removal of the Joint Chiefs from any command function.

As a matter of fact, the failure of the Joint Chiefs of Staff to perform their planning duties and the way they were turning more and more to command was much more of a step in that dangerous direction. The restoration of active civilian control and the express exclusion of the Joint Chiefs of Staff from the line of command ended that tendency.

The increased managerial duties of the Chairman, therefore, do not signify any trend except toward increased efficiency of the Joint Staff.

As long as the Department management committee—the Joint Secretaries—is civilian, any service military chief sensing the slightest move of the Chairman to try to gain control of either the thinking or the factual investigations of the Joint Staff has a ready civilian avenue of complaint. Knowing the characters of our Joint Chiefs, we can be sure they will not hestitate to use it. As a matter of fact, the trend away from a single military commander, like the trend away from centralization, is both clear and irresistible.

Conclusion

The tendency toward centralization in the Department of Defense has been ended. Decentralization is today's reality. Before any reverse trend can be started, some very fundamental concepts—for the first time clearly identified—will have to be faced and a contrary selection openly made.

Even if that unexpected event should occur, the changes would be made consciously, instead of unconsciously as they were in the past.

One word of caution is necessary. Decentralization will not be effective unless the military departments in all their echelons are organized to accept the operating responsibilities delegated to them. In order to delegate, there must be available an effective recipient of such delegation. Some of the blame for operations having crept into the Office of the Secretary of Defense in the past can be laid at the door of the military departments. They have not always been anxious to operate. Vacuums are filled—in nature and in the Pentagon.

Steps are now under way to reconstitute the military departments to discharge their delegated responsibilities and powers, consistent with the basic philosophy outlined above.

Furthermore, as Secretary Forrestal frequently said, "Organizational charts do not do the work—work requires men." No chart can be prepared which cannot be ruined by weak or stupid executives. The concept of active civilian control will not succeed under Secretaries who desire to be passive or who have no capacity for sound decision. Shifting responsibility to the military hierarchy would provide no guaranteed remedy for the unsuitable civilian; it would be merely an exchange of risks. There have been weak and unsuitable military chiefs. Furthermore, while proficiency in specialized skills is still an important prerequisite for top military command, it is not the most important attribute of a strong and effective top executive.

The risks can be lessened only by the appointment of suitable top executives—military and civilian. The present organizational setup makes it possible for the government, for the first time, to offer positions of prestige and effectiveness to leaders in industry, labor, and the professions. It should result in an increased infusion of the needed skills—special and general alike—at levels of importance. The contributions of these men can now be made not only with a minimum of frustration, but also with a reasonable chance of substantial accomplishment.

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Competition for Military Writers

Remuneration for all published articles submitted by military writers (active-duty personnel of the uniformed services of the United States Armed Forces) in the magazine is on a competitive basis.

Monthly Award—All articles written by military authors published in each issue are reviewed by a board of officers representing the Command and General Staff College. The board selects the first and second best articles published each month. The authors of the selected articles receive $100 and $50, respectively.

Annual Award—When 12 monthly awards have been made, the 12 first place articles are reviewed by the Faculty Board and the Annual Award article selected. The author of the Annual Award article receives $350.

The selection of both monthly and annual awards is based upon the soundness, readability, completeness, reader appeal, accuracy, substance, originality of thought, authoritativeness, and the over-all merit and quality of the article.

Civilian Writers

Reimbursement for published articles submitted to the MILITARY REVIEW by civilian authors (to include retired military personnel, and reserve personnel not on active duty) is on an individual basis.

EQUIPMENT WEATHER TESTS

SINCE the American soldier may be called upon to serve anywhere in the world, his equipment must be capable of top performance in a wide variety of climatic conditions.

Cognizant of this fact, provision is made by the Army for equipment, supplies, and techniques to be tested and evaluated under varying climatic extremes before they are standardized and procured in large quantities for use by Army troops in the field.

Cold weather tests are held at the Joint United States-Canadian Arctic Test Station at Fort Churchill, Canada, and environmental desert tests are conducted at the Yuma Test Station, Arizona.

In one of the arctic tests of engineer equipment, a mobile fire protection unit and set were tested in conjunction with a mobile steam generator. In addition to checking the performance of the unit at low temperatures, this test was to determine time constants for freezing of water storage tanks and the amount of heating required for thawing or providing fluid water flow.

Water in a 1,000-barrel tank, in which special drain valves with piping and tank heating coils were installed, was periodically checked for ice formation as winter progressed. When ice had accumulated on the inside of the tank in excess of 30 inches, the steam generator was operated to melt the ice back to this thickness.

Four buildings, two shelters, wash room facilities, four heaters, automatic valves for liquid fuel regulation, and a steam generator were on the arctic test program. Buildings were tested for occupants' comfort. Cold weather erection tests were made on all new buildings with dismantling and re-erection following in milder weather. One building was tested as a housing for water supply equipment.

Perhaps the most important phase of the tests was that which dealt with low temperature starting and operation of engines. Four engine-generator sets equipped with different systems of winterization were tested, as well as two winterized *D-7* tractors. The effectiveness of an ice fog eliminator was also examined.

Among the demolition items subjected to a limited arctic exposure test and followed by tests for operational efficiency and for capabilities and limitations were a repeater-type pack fastening tool, demolition tape, dynamite substitute, detonating cable, dynamo exploder, and an arctic adapter for drive-type pickets.

Continuous exposure tests were conducted at extreme temperatures on base plastics, marking paints, protective coatings, and screens. After exposure, a plastic sign was examined for flexibility, visibility, and adherence of marking paints. The condition of samples of coating systems was checked periodically.

As part of the investigation of packaging and protection material, a continuing test lasting over a three-year period is being conducted on the vapor phase inhibitor.

The Corps of Engineers test and evaluate equipment, supplies, and techniques under divergent climatic extremes before they are procured and standardized in large quantities for use by Army troops

A test involving the construction of an arctic vehicle test road was conducted in co-operation with the Canadian Army Engineers. Road cross-sections included in the 24-foot roadway were built by the gravel fill method, the harrow and roller method, the Canadian-American (pulvimixer) method, and the Alaskan (logging road) method. Records of construction and performance under traffic are being maintained to determine the most effective method of arctic road construction.

The desert section of the Corps of Engineers Climatic Field Test Team was established at Yuma Test Station in 1951, marking the beginning of the most recent phase of Engineer field tests in desert environment. Previous tests of equipment had been conducted in the same vicinity.

Desert Tests

During the summer of 1952, tests were made of roadway construction equipment, prefabricated barracks and shelters, air conditioners, *D-7* tractor accessories, trailer-mounted lubricators, engine generator sets, surveying equipment, and packaging systems.

In the desert tests of prefabricated buildings for barracks, data was taken on exterior and interior surface temperatures, air temperatures and humidities, light and dust penetration, and occupant reaction. Two types of buildings, temperate and tropical, were tested on adjacent sites to determine which would be most suitable for desert use. Occupants definitely preferred the temperate model when equipped with evaporative cooling. Without cooling, the temperate building did not appear to have sufficient ventilation to remove the radiation heat which had been absorbed during the day.

Solar radiation, as observed in the 10-kilowatt-engine generator tests, may raise temperatures of olive drab painted surfaces to 160 degrees Fahrenheit. This resulted in heat being transferred from the engine to electrical components which caused their failure. Redesign of such components as voltage regulators should correct these deficiencies. At extreme high ambient temperatures, there may be several remedies for critical heating problems.

Magnetic and sun compasses were tested for effects of high temperature on the materials in the components, and the effects of dust infiltration on accuracy.

The winterization version of the *D-7* tractor and the lubricator were desert tested to discover whether such equipment —which has been processed for extreme cold weather—would require reprocessing or removal of winterization kit components for warm weather operation. The results indicated that necessary reprocessing could be accomplished easily by field units.

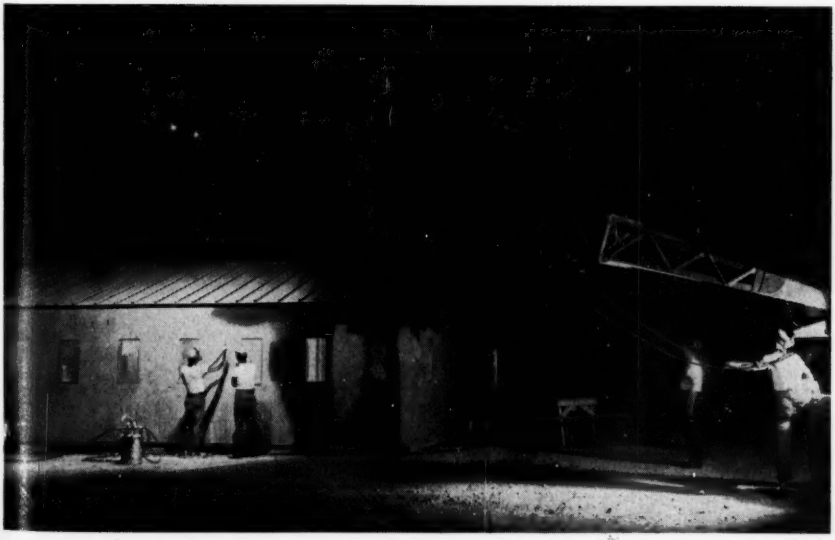
The principal item of a pioneer set developed during World War II for rapid roadway construction was redesigned in 1951 to increase performance and decrease costs. This item, a V-shaped plow or drag to clear roadways, was mounted behind an all-wheel moto-grader. The operational advantages claimed were a more stable platform, better control, safer stowage and transport, a faster over-all rate of production, and ease of installation and maintenance.

Dust Factor

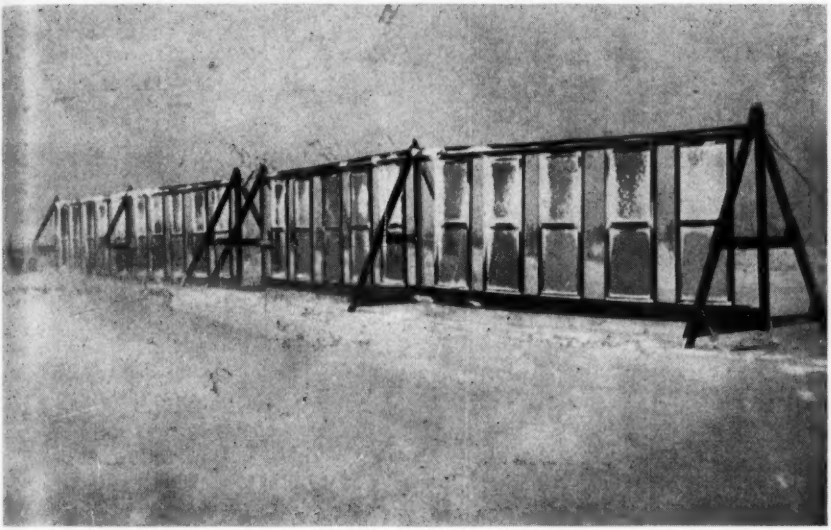
One of the main stress factors found in desert operations was dust—usually generated either by wind or mechanical agitation as in vehicle operation. As neither of these dust sources can be controlled sufficiently for test purposes, a dust generator was constructed. A fairly uniform dust atmosphere was provided by agitating the soil surface with a chain drag.

The results of the tests have revealed many problems of desert and arctic operations. Tests proposed for the future, in desert and arctic climates, indicate that the Corps of Engineers is increasing the scope of its climatic field testing program.

Engineer arctic tests are held at the United States-Canadian Test Station at Fort Churchill, Canada, and desert tests are conducted at the Yuma Test Station, Yuma, Arizona. Above, flags of Canada and the United States flying over Fort Churchill. Below, engineers painting an experimental barrack at Yuma.—Department of Defense photos.

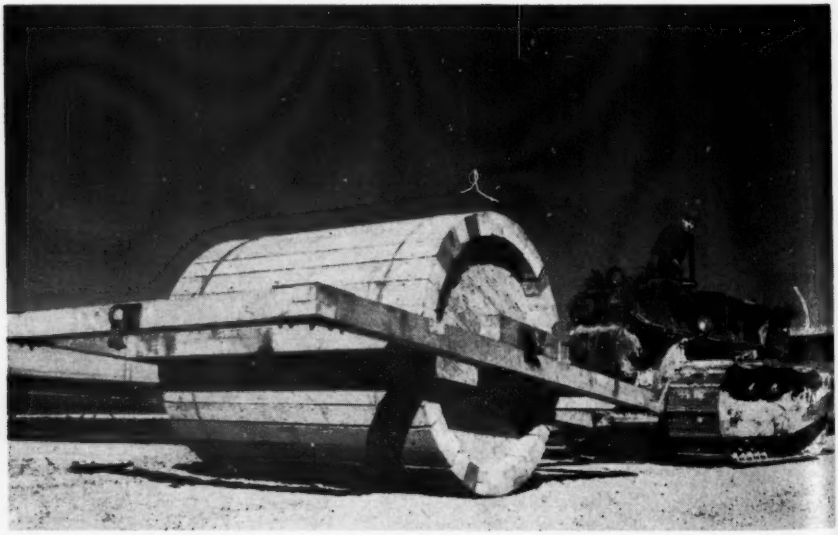


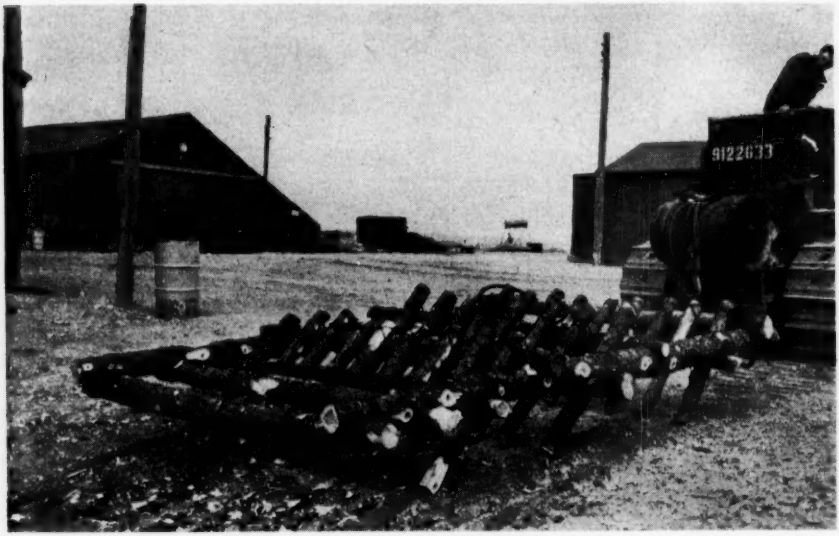
The most important phase of the climate tests was that which dealt with low temperature starting and operation of engines, and the adaptability of equipment in both arctic and desert extremes. Above, a bulldozer clearing snow at Fort Churchill. Below, an arctic model lubricator being tested in the Yuma desert.—Department of Defense photos.



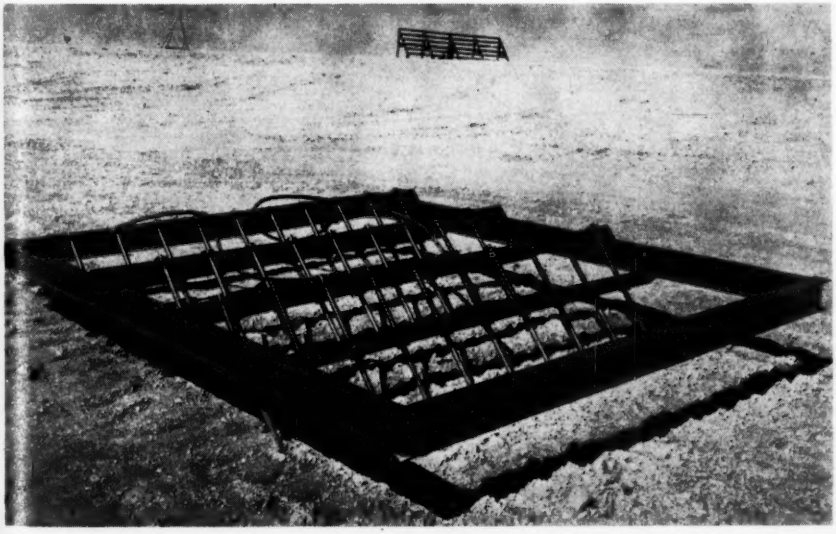
The arctic test station conducts cold weather exposure tests of demolition items, water tanks, building equipment, heaters, and the protective packaging of material. Above, plastic and metal screens undergoing an arctic exposure test. Below, an arctic exposure test of demolitions, materials, and packaging.—Department of Defense photos.

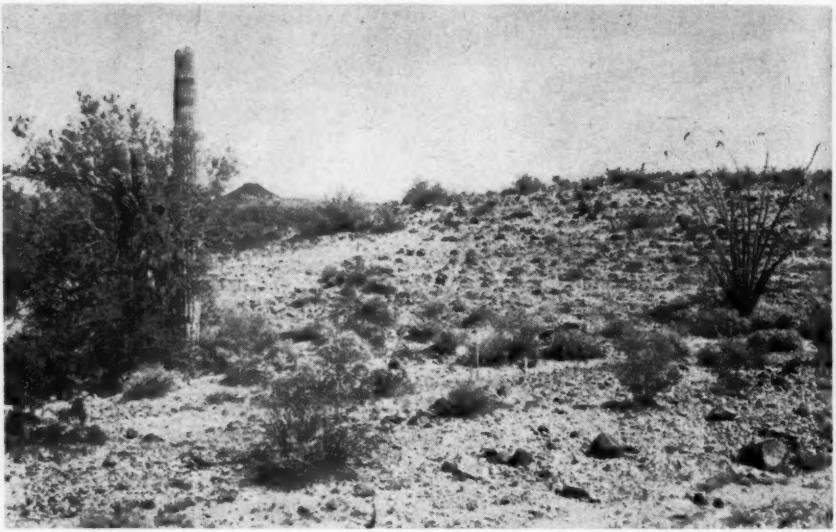
Tests involving the construction, suitability, and maintenance of arctic vehicle test roads are conducted in co-operation with Canadian Army Engineers. Above, a view of an arctic test road constructed over frozen muskeg. Below, a foreign-type native wood roller used for constructing and maintaining snow roads.—Department of Defense photos.





In addition to testing different types of arctic road construction equipment, records are maintained of construction and performance of roads under traffic. Above, a foreign-type native wood drag used in preparing and maintaining snow roads. Below, the American design of the foreign-type native wood drag.—Department of Defense photos.

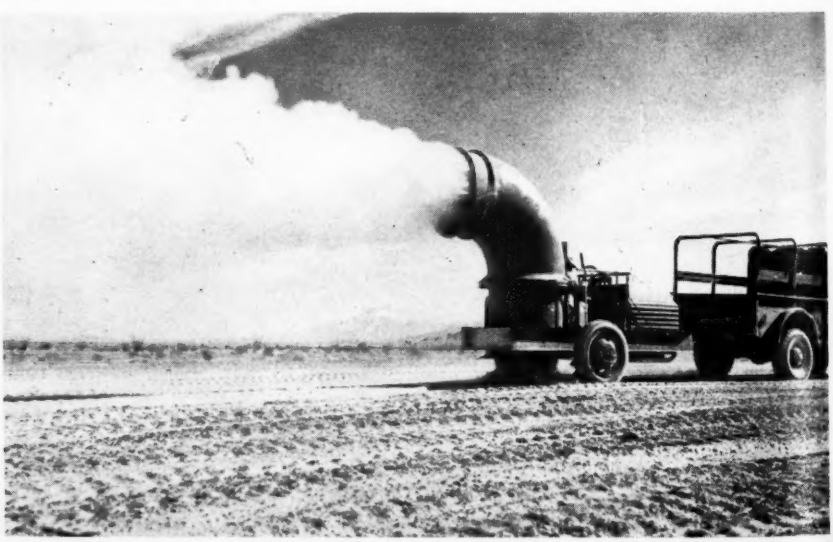




The desert engineers test road construction equipment in order to obtain better performance, better control, safer stowage and transport, and a faster over-all rate of production. Above, a typical rocky desert site used in constructing test roads. Below, a grader cutting a road through hummocky desert sand.—Department of Defense photos.

Among the various desert tests conducted at the Yuma Test Station is the exposure of different types of military equipment. Above, sand bags being exposed in the desert to measure loss of strength through exposure to sunshine. Below, an engineer testing a shelter designed for housing electronic instruments.—Department of Defense photos.

One of the main stress factors in desert operation is dust, usually generated either by wind or by vehicle operation. Since these dust sources cannot be controlled for test purposes, a dust generator is used. Above, trucks raising dust along a desert road. Below, a dust generator producing a cloud of dust.—Department of Defense photos.



MILITARY NOTES AROUND THE WORLD

UNITED STATES

Automatic Heat Control

The latest addition to the Army's cold weather equipment, called the *climastat suit*, features automatic heat control. A distinct advantage of the new suit, an automatically controlled version of the *coldbar suit*, is that it provides a wider range of protection under varying cold weather conditions than its predecessors.

The new model has two layers of plastic insulation whereas the older suit had but one. Quartermaster experts explain that the two layers of plastic insulation with staggered perforations keep the wearer warm by forming an air seal surrounding his body while he is inactive. When the wearer is active, a forced pumping action results, providing ventilation through the holes and ridding the body of excess heat and moisture. It can be worn beneath the regulation field jacket and trousers. Because of its flotation characteristics, it can keep a fully-equipped man afloat.—*All Hands.*

Add Strength

During Fiscal Year 1955, the Air Force plans to increase its officer corps by 7,000 and its enlisted strength by 12,000 according to recent budget estimates. Aviation cadet ranks, however, will be cut by approximately 4,150.—News release.

Lightweight Jeep

An all-aluminum body which weighs only 81 pounds, various other aluminum parts, and magnesium wheels are essentials which aid in the weight reduction of a new model jeep designed to meet the increased demands of mobility in modern warfare. The *Aero Jeep*, as it is called, is 1,200 pounds lighter, and 3 feet shorter, than the previous model but there is an 85 percent interchangeability of parts. It is felt that the new jeep will be a big aid in airborne operations, either by helicopter or by air transport.—News release.

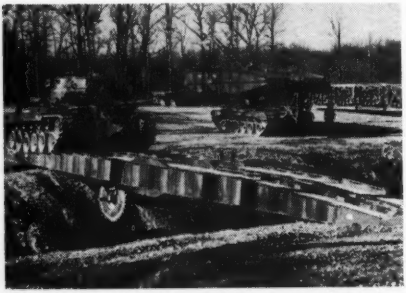
Submarine Defense

By converting 10 World War II carriers of the 27,000-ton *Essex Class Carriers*, the Navy is seeking to bolster its defenses against the threat of the Soviets' growing submarine strength. The carriers will load "hunter-killer" groups charged with the task of clearing vital sea lanes of enemy submarines in the event of war. The conversion will give the Navy the ships necessary to handle its big new submarine-hunting planes and at the same time supply other vessels in "hunter-killer" groups for extended periods. The Soviets reportedly have 370 submarines in service or reserve and another 100 under construction.—News release.

Bridge Developments

Three new types of military bridges, each capable of supporting up to 60 tons, are in the final stages of testing and development by the Corps of Engineers.

To answer the need for a bridge that could be placed easily in the face of heavy enemy fire, the Engineers have developed a hydraulically operated *scissors-type bridge*. The bridge is made of aluminum



On the left, is the *portable assault bridge*, and on the right, the *scissors-type bridge*.

and is carried and launched by a modified turretless tank. In this manner, the bridge can be placed without exposing troops to enemy fire. When placed, the bridge is released from the tank.

The *portable assault bridge* rests on two giant-size rubber tires and can be towed easily to the site of the launching by attaching it to the back of a truck. It can be pushed into position then by a tank. It has a roadway width of 13½ feet and is 43 feet long.

The *aluminum (division-type) fixed bridge*, known as the *T-6*, is expected to replace the *Bailey Bridge* of World War II fame. It is made of aluminum and weighs approximately 60 percent of a comparable steel bridge. A 75-foot length can be manually erected in approximately one-third the time required for the World War II model. It can span approximately 180 feet. The bridge is pushed into position by a bulldozer.—News release.

Military Construction

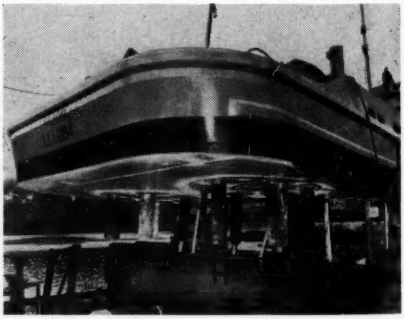
Military construction in the Atlantic and Arctic areas, totaling more than 223 million dollars, was carried out by Army Engineers last year, mostly for Air Force installations.—News release.

Flyable Shelter

A new durable transportable structure capable of being lifted by a helicopter and flown over a distance of several miles was recently demonstrated by the Marine Corps. The semicircular building, equal in area to a 38-man barracks, is framed with pine battens and covered by a plastic shell.—News release.

Rudderless Towboat

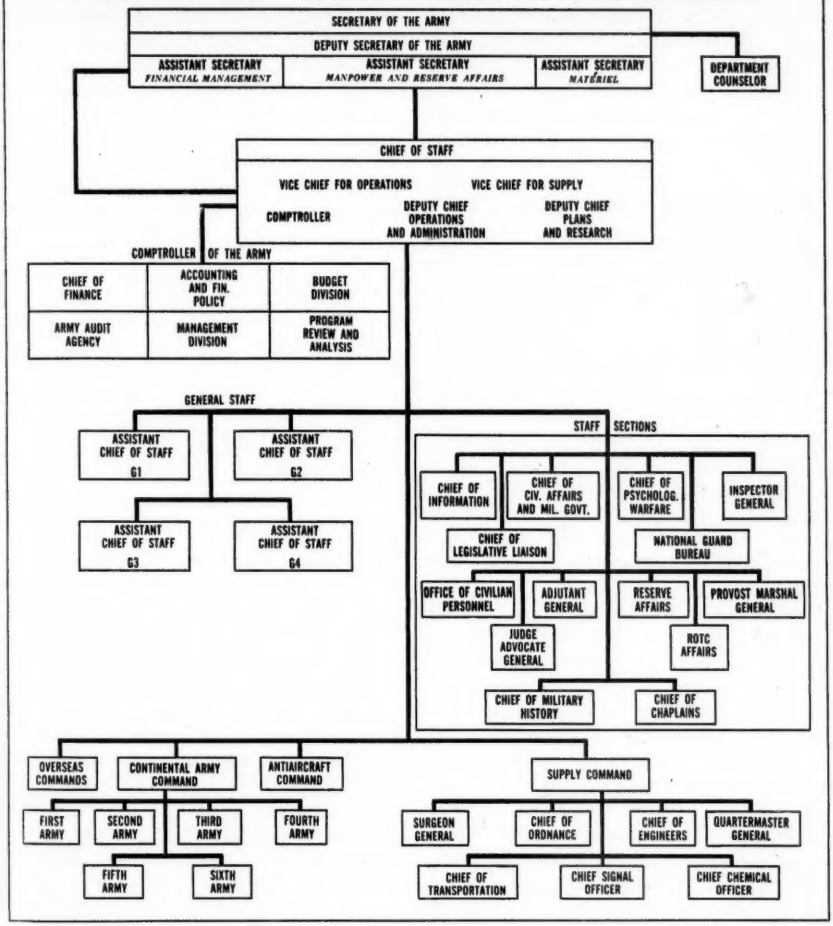
In its search to develop a fleet of towboats and barges for the movement of military cargo on overseas inland waterways, the Transportation Corps is testing a river towboat with vertical axis propellers. There are 12 spinning, 4½-foot metal blades, projecting downward into the water, which serve as both propellers



Vertical axis propellers aid river craft.

and rudder for the craft. Steering is done by changing the pitch of the blades. In addition to its extreme maneuverability and increased power over comparable screw-type units, the vertical axis propeller-rudder blades can be changed without putting the craft in drydock.—News release.

PROPOSED ARMY REORGANIZATION



A plan which would permit vast expansion immediately upon the outbreak of war is outlined in the new proposed reorganization of the Army Establishment. The role of the Chief of Staff has been redefined to make him operating manager of the entire Army Establishment. There would be an additional Vice Chief of Staff, one in charge of Operations and the other of Supply. A Supply Command that would have general responsibility for the seven technical services is planned. The functions of Army Field Forces and direction and control of the six continental armies would be placed under a Continental Army Command according to the proposed plan.—News release.

Turret-Type Mount

A new turret-type machine-gun mount, designed specifically for use on the *M48* medium tank, has been accepted by Army Field Forces. The new mount provides for all-around battlefield surveillance, aiming, firing, clearing jams, reloading, and even for replacing the gun or sight without requiring the commander to expose himself. It is effective against both enemy personnel and aircraft.—News release.

Exercise 'Flash Burn'

More than 60,000 troops are scheduled to participate in Exercise "Flash Burn" to be conducted at Fort Bragg, North Carolina. The exercise is expected to offer an excellent opportunity for participating troops to learn about the new, modern weapons of warfare and how to combat them as many of the Army's new weapons will be present for the first time. The 280-mm gun, the big *Honest John* field artillery rocket, and the destructive ground guided missile, dubbed the *Corporal*, are among the new weapons to be present. Troops will also be taught to defend against chemical, radiological, and biological attacks from both the ground and air. Airborne troops and helicopters will also play an important part in the operations.—News release.

Inactivate Ships

During the next 18 months, the Navy plans to inactivate approximately 50 ships on a phased time schedule. Both combatant and noncombatant type ships are included in the planned cutback.—News release.

Super Carrier

A contract for the construction of the third of the new 60,000-ton *Forrestal Class Carriers*, designed to handle the biggest Navy planes, has recently been awarded. The ship will cost about 182 million dollars.—News release.

Contract Tours

The authority to start contract tours for Reservists, which will provide severance pay for officers and enlisted men released from active duty prematurely, has been received by the Department of Defense from the Bureau of the Budget. Originally approved in the Armed Forces Reserve Act of 1952, the implementation of the contract tour has been delayed due to a discussion over the length of the tour.

Under the compromise worked out, tours of 1, 2, 3, 4, or 5 years have been agreed upon but it limits to 20 percent the number in each category in relation to Reserve strength. Under the Reserve Act, severance pay of 1 month's pay and allowance times the years or portions thereof remaining to be served under an active duty contract will be awarded if a Reservist is released prematurely.—News release.

Aerial Delivery

A new method to parachute heavy equipment to forward area troops, a possible total of 40,000 pounds in a few seconds, has been devised for the *C-124*, the Air Force's largest cargo plane. The new system uses a pair of rails, a chain drive, and specially-designed pallets to move the cargo out of the aircraft quickly. The entire delivery system weighs about 2,800 pounds and requires only minor structural modification of the plane. In the new method, three of the previously packed pallets are loaded into the plane and hooked to the chain drive. As the drop area is approached, the tie downs are removed and at the desired time the chain drive is started and equipment is easily dropped from the plane. A typical three-pallet drop load to forward area troops would be a truck or prime mover, a gun, and ammunition, each on individual platforms. As many as six parachutes, each capable of supporting 3,000 pounds, are required on heavy loads.—News release.

Atom Bomb Storage

Authority has been granted the Department of Defense to build a global chain of storage bases for atom bombs. The overseas project is expected to cost about 11 million dollars.—News release.

Information School

After a survey committee, which included representatives of all three services and the Department of Defense, had recommended that the continued operation of the Armed Forces Information School at Fort Slocum as an all-service project was no longer feasible, the Army has decided to operate the school for its personnel.

Under a Department of Defense plan, the Army will be able to take students from the other services on a mutually agreeable basis. Because of reduced requirements for public information and troop information and education specialists in the Navy and Air Force, these services had deemed it uneconomical to continue their participation in the project. The Army plans to move in additional units so that facilities at Fort Slocum will be fully utilized.—News release.

Midget Jet Helicopter

Primarily built for military applications, a midget jet helicopter, called the *Mid-jet*, weighs only 100 pounds but is capable of lifting more than four times its own weight and flying at speeds of up to 80 miles an hour. The craft should prove ideal for beachhead assaults, dropping men behind enemy lines, evacuation of pilots and other personnel from inaccessible places, and for other military operations. Because of the simplicity of its design, it is estimated that it can be quantity produced for as little as $1,000 a unit. It is powered by two ram-jet engines mounted on the tips of the rotor blades. These engines are an improved aluminum design with self-starting characteristics.—News release.

Experimental Convertiplane

A completely new concept of flight, known as the "unloaded rotor" principle, in which a machine equipped with a rotor for vertical flight and wings and propeller for forward flight, is featured in the *XV-1* convertiplane. The primary function of the craft will be the exploration of the application of the convertiplane principle

Experimental convertiplane is being tested.

to larger aircraft and of the tactical military use of such planes for reconnaissance and other related missions.

In vertical flight or hovering, the rotor provides all the lift, while in forward flight, the wings provide essentially all the lift, thus eliminating the speed limitation encountered by conventional helicopters due to stalling of blades when they must carry lift at high speeds. Each of the three blades of the rotor is powered by a pressure jet unit located at the tip of the blade. A reciprocating engine is provided on the aft fuselage to supply air to the pressure jet units during vertical flight and power to the propeller during forward flight.

The wings are approximately half the size of the wings for conventional fixed wing aircraft since they do not provide the lift during takeoff or landing. In addition to the pilot, the craft is designed to carry three passengers or two litter patients and an attendant.—News release.

BRAZIL

Blast Furnace

A new blast furnace at Volta Redonda, having a capacity of 1,200 tons of pig iron a day, was recently opened by the President. It is the second blast furnace in the area and one of the largest in the world.—Brazilian Embassy News Bulletin.

Goods Exchange

A recently signed trade agreement calls for the exchange of 8 million dollars worth of goods between Bolivia and Brazil. In exchange for sugar, raw cotton, rice, cotton textiles and yarns, rayon textiles, chemicals, iron and steel products, and miscellaneous goods, Bolivia will send tin, rubber, lead, antimony, asbestos, sulphur, and miscellaneous raw materials.—News release.

SWEDEN

Lower Draft Age

In an effort to utilize better its available facilities, the Swedish Army has asked parliamentary approval of its proposal to lower the military draft age from the present 21 to 19 years. At present, the yearly intake of 21 year-olds is about 27,000 but because of the increased birth rate in the 1930s, the figure is expected to reach 50,000 in 1960. Present facilities are not adequate to take care of this increase so it is proposed to train part of each age group in advance. Discussions are underway to determine how to apportion the new defense budget of 400 million dollars among the Army, Navy, and Air Force. Many feel the Air Force should have a separate appropriation.—News release.

AUSTRALIA

Atomic Training Plan

Plans are being formulated in Australia to include basic defense training against possible atomic attack as part of routine training according to the Chief of the Australian General Staff.—News release.

ITALY

Assemble Planes

Work has started on the assembly of the first shipment of 50 *F-86K Sabre Jet* interceptors to be sent to Italy under the NATO offshore procurement program. With the exception of a modified fire control system and different armament, four 20-mm cannon being substituted for the 24 *Mighty Mouse* 2.75-inch rockets, the plane is similar to the *F-86D* of the United States Air Force. It will be capable of seeking out an enemy bomber at night or in murky weather.—News release.

NORWAY

Hydroelectric Capacity

Plans to continue to expand the country's hydroelectric capacity at the record 1953 rate for the next 4 years were announced by Norway's Electric and Waterfalls Board. During the past year, plants with a capacity of 320,000 kilowatts were completed while in the previous 25 years up to 1945, only an average of 40,000 kilowatts was produced annually. Present plans call for a plant producing 400,000 kilowatts a year, Norway's largest, to be built at Tokke.—News release.

CANADA

Snow Vehicles

Experimental snow-going vehicles, including some utilizing new principles of propulsion over snow, are being tested in northern Ontario by the Canadian and United States Armies. Details of the trials are secret.—News release.

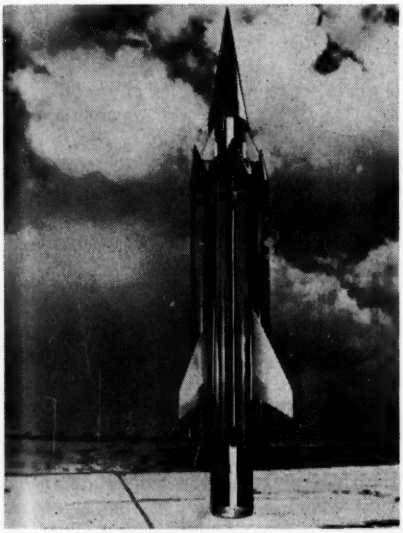
Pipeline Planned

More than 600 miles of British fuel pipeline have been ordered for a supply line to be built from Haines, the most northerly ice free port in the Chilkoot Inlet, to Fairbanks. The line will cross 44 miles of British Columbia and 240 miles of Yukon and will be used to support units of the United States Army and Air Force operating in Alaska.—News release.

GREAT BRITAIN

Test Rocket

A strange-looking guided missile test vehicle has a series of eight booster rockets grouped around the rear end which help the main rocket accelerate to full



Guided missile aided by booster rockets.

supersonic cruising speed. The boosters fall away as soon as they have been used for the launching. No details of its speed, range, weight, or intended use have been released.—News release.

Hydrogen Bomb 'Safe'

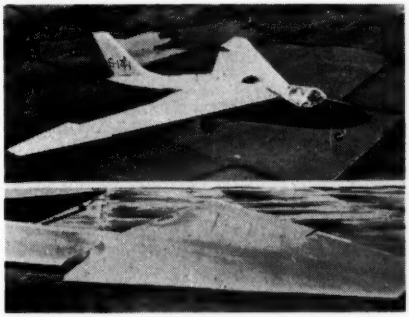
Because a hydrogen bomb must be detonated by an atomic explosion while an atom bomb could be set off by some stray neutron which is usually present in its vicinity, a leading British nuclear physicist declared that the hydrogen bomb is much safer. He also said man could not produce enough heat to cause fission of the inert substances of the earth so we do not have to worry about the destruction of the earth by man.—News release.

Aid RAF

The final details of a 252 million dollar American aid deal to help re-equip the Royal Air Force are being worked out by British and United States officials. Plans call for the aid to be spent over a period of 3 years in the form of offshore procurements which will finance the production of war planes in British factories. These planes would go to the Royal Air Force.—News release.

Swept-Back Wing Research

A rotating wing tip, which can be operated either together with or in opposition to that on the opposite wing, is a feature of the *Sherpa* research plane. Although the *Sherpa* itself is capable of low speeds only, the aero-isoclinic wing has been designed in an attempt to solve many of the problems that occur when an aircraft with a swept-back wing flies at great speeds in high altitudes. When a normal swept-back wing is subjected to heavy



Top photo shows *Sherpa* in flight, while lower one gives closeup of rotating wing tips.

loading, it bends upward at the tips and loses incidence.

The wing of the *Sherpa* is so designed that when the tips are bent upward, the entire wing will twist and thus keep the angle of incidence constant.—News release.

THAILAND

Emergency Preparations

Extensions and improvements to airfields in the north of Thailand are being rushed by the Government to meet any threat arising from the Vietminh rebel drive in Indochina. Most of the fields are of grass or mud and are useless to bombers and fighters for part of the year.—News release.

BULGARIA

Heavy Industry

A new five-year plan, differing from that of other satellite countries in that the intentions are to increase iron and steel production and heavy industry in addition to raising living standards through higher production of food and consumer goods, has been announced by the Government. Other satellites have placed their emphasis on light industry and food and on one-year plans rather than the five-year basis. The project is scheduled to run through the year 1957.—News release.

ROMANIA

Revalue Currency

The leu is to be revalued for the third time since the Communists took power in that country. The gold content of the leu has been increased from .079346 to .148112 grams in an effort to increase the purchasing power of the people. Previous revaluations occurred in 1947 and 1952 when new notes were issued and prices altered.—News release.

GREECE

Air Arm

Through the assistance of the United States, Greece now has an Air Force of 400 planes, including 150 jets, according to the Defense Minister. He said that the United States has also sent a large number of modern artillery pieces to replace obsolete British-supplied equipment.—News release.

YUGOSLAVIA

Annual Budget

An 11.3 percent reduction in defense expenditures, despite an over-all increase, featured the new budget presented to Parliament recently. Ever since Yugoslavia broke with the Cominform in 1948, military expenditures have represented the greatest item in the country's annual outlay. The 535 million dollar defense item, a drop of 7 million dollars from the previous year, is still the largest single amount. The total budget amounts to approximately 875 million dollars, a 12 million dollar increase. The drop in defense appropriations reflects the belief that the chances of a Soviet-led attack to overthrow the Government have diminished.—News release.

Merchant Marine

A 10-year building program is being launched to expand the country's underdeveloped merchant marine and at the same time to decentralize the shipping now concentrated in the northern Adriatic port of Rijeka. At present, Italian and British ships carry the bulk of the country's exports with only 25 percent being shipped in Yugoslavian vessels. By 1956, it is hoped that 16 ocean-going vessels, totaling 368,000 tons, will be added to the fleet.—News release.

Drought Hurts

The planned economy of the country for the coming year has been dealt a staggering blow by the nationwide drought. An average rainfall of only 7.8 inches during the crucial winter planting and planning months of October and November has already caused difficulty. The winter wheat crop has incurred severe damage and a minimum loss of at least 40 percent is anticipated in the annual harvest. Experts hope that a warm rain soon, plus a good thirst-quenching blanket of snow before spring, will salvage a portion of the crop.—News release.

FRANCE

SO. 1220 Djinn

A compressed air-driven rotor system with no tip burning, allowing the rotor to function in a relatively quiet manner, is a feature of the *SO. 1220 Djinn*. The compressed air is ejected at the ends of the

Helicopter lands on rear of 2½-ton truck.

rotor blades without the use of combustion chambers and exhaust ducts.

It has no mechanical or thermodynamic apparatus at the tips of its rotors and is a remarkably simple aircraft. The directional control of the craft in stationary flight is very simply managed by deviation of the turbine exhaust. The air ejection nozzles are flush with the rotor contours so that the autorotational qualities are excellent. The plane's maneuverability is demonstrated by its ability to land on the rear of a 2½-ton truck.

The fuel consumption is approximately one-third of a ramjet helicopter of equivalent performance.

The single seat version, with a total weight of about 1,100 pounds, has a ceiling of approximately 3,300 feet in stationary flight and a cruising speed of 62 miles an hour. A two-seat model is also planned.—News release.

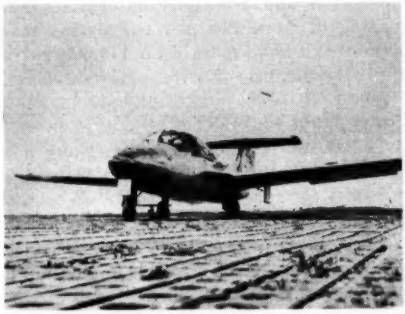
Radio-Guided Missile

The manufacture of a radio-guided antitank missile has reached the mass production stage in France according to the Air Minister.—News release.

Jet Trainer

The *Morane Saulnier 755* is an economical, side-by-side two-seater training plane, equipped with two Turbomeca *Marbore II* jet motors of 880 pounds thrust each. It possesses the characteristics of a modern pursuit plane with pressurized cabin, machine guns, radio and magnetic compasses, gyroscopic sight, dive brake, and night flying equipment.

It is virtually a midwing monoplane, without sweepback, and it has the single



***Morane Saulnier 755*, French jet trainer.**

type rudder. The plane weighs about 5,950 pounds. It has a maximum speed of 485 miles an hour at 29,500 feet and can reach this altitude in 17 to 18 minutes. The plane is designed so that the motor can be changed in 30 minutes.—French Embassy Press and Information Division.

Deliver Steel

Deliveries have started on an order of 100,000 tons of steel to the Soviets. The order was for steel pilings and heavy sheets which French sources said were not classified as "strategic."—News release.

USSR

New Flag

A light blue vertical stripe along the left side will be added to the traditional field of red in the new flag of the Soviet Union according to the Moscow radio. A gold bordered star set against the Communist hammer and sickle will adorn the top left corner. The present Soviet flag has a gold hammer and sickle below a five-pointed star in the upper corner near the staff and is on a red background.—News release.

Discard Abacus

With a more business like approach in industry and finance generally, modern calculating machines will replace the abacus method of accounting in commercial, industrial, and transport enterprises according to Tass. The new calculating machines each have more than 110,000 parts and over 3 miles of wire.—News release.

Baltic Fleet

The Baltic fleet of the Soviet Navy has been strengthened by the addition of the so-called *Skoryi* type destroyer according to official information of the Swedish Navy. The new warship is equipped with the latest reconnaissance and range-finding radar. Its armament consists of four 13-centimeter guns in two turrets, two 7.6-centimeter antiaircraft guns, seven 37-mm automatic guns, and eight 53-centimeter torpedo tubes in quadruple sets. It reportedly has a speed of 36 knots.

According to a Swedish estimate, the Soviets have approximately 120 submarines in the Baltic in addition to 150 motor-torpedo boats and about 250 minesweepers. They are also reported to have eight heavy cruisers in the area. The Soviet Naval Air Force is using a new twin-engine jet plane carrying two torpedoes or other projectiles of the same weight. The submarines are said to be an improvement of the German types.—News release.

COMMUNIST CHINA

Develop Interior

An ambitious network of major trunk rail lines of great strategic and economic importance is planned for the remote interior provinces of northwest and southwest China. The projected network, if successfully completed, will link the two areas, in addition to the areas bordering Mongolia, the Soviet Union, and Tibet, with major rail lines which are more than 1,000 miles from the China coast. It will also be linked with other existing lines in China.

This network would open up economically underdeveloped areas as well as facilitate central control over the borderlands. It would also provide a modern transportation system for the first time in the strategic region which was once China's base for resistance against Japanese invasion and might become again a major Chinese base in the event of a general war. Railway repair and construction have been given the highest priority and constitute the largest expenditures by the Government.—News release.

NORTH ATLANTIC TREATY NATIONS

Base Budget

On its 1954 program of permanent defense installations, known as infrastructure, the North Atlantic Treaty Organization plans to spend 252 million dollars. About half of this sum will be spent on jet fuel pipelines to link the central European fuel network with the Channel and Mediterranean coasts at Le Havre and Marseilles. Already under construction is a French-American pipeline from the Atlantic port of St. Nazaire to Metz. This line undoubtedly would be joined to NATO facilities in wartime. The construction of airfields in Europe, the main effort of the program, is nearing completion with 120 fields ready for use and more than 40 under construction.—News release.

FOREIGN MILITARY DIGESTS

Invention: Machinery and War

Digested by the MILITARY REVIEW from an article by Brigadier C. A. L. Brownlow in "The Army Quarterly" (Great Britain) October 1953.

WAR HAS been defined as a political act where antagonistic groups of men try to impose their wills by force. The application of that force is implemented by the invention of machinery and the weapons of war.

Struggle on earth is not confined to man. A hedgerow is a perpetual battlefield. The animal kingdom displays inventive genius for war from the jet propulsion of the octopus to the tusk of the elephant. Man's greatest inventive act was to discard the physiological weapons of tooth and claw for mind-designed weapons, capable of being laid aside for more efficient tools. So the forest bough and the convenient stone gave place to club and megalithic flint which slowly were developed into sword, bow, and body armor. It is to be noted how invention in war is always toward protection and power to strike at a distance.

Middle Ages

The fascinating story of the development of early weapons must be passed over, and attention fixed on the Middle Ages in Europe. Here, we find society dominated by the baronial castle. The ruin looked at today as a picturesque object was then the power factor in human society; a power that endured from generation to generation until shattered by the invention of the cannon. Consider the radical change in the art of war effected by using the chemical action of gunpowder to supersede muscular energy. It brought a revolution in the political structure of mankind comparable only with the atom bomb.

Just as the cannon, by its power to breach the castle wall, caused political power to pass from the baron to the greater realm of the king, who alone could afford artillery, so, vast industrial and economic resources are required to produce and use the atom bomb, which necessitates larger integrations of human societies.

The sixteenth, seventeenth, and eighteenth centuries produced no radical changes in naval and military equipments. Wind and sail took ships of war into action. The legs of man and horse propelled

armies into battle. Afloat and ashore, weapons still remained the muzzle loader and cold steel. This phase culminated with the close of the Napoleonic age at the battle of Waterloo; after which men rested from large-scale wars, until the middle of the nineteenth century, when they launched forth with renewed vigor and new instruments of destruction.

Nineteenth Century

A series of national conflicts exploded over the world. Russia fought England and France. Austria fought France and Italy. Prussia waged war in succession against Denmark, Austria, and France. In the United States, civil war raged for 3 years and a million men were killed. Russia fought Turkey. Wars broke out between the United States and Spain; and between China and Japan. Great Britain engaged in incessant small wars on three continents. But these campaigns were of a different order from those of previous eras, due to the change wrought by the inventor. These innovations were: the telegraph, the railway, the rifle, the breechloader, smokeless powder, and the steam driven armored ship.

The telegraph was first used in the Crimean War to connect England with the distant theater of operations; and with each succeeding war, its use expanded until electric cables, like nerves, spread a network between the various headquarters of an army in the field. This scientific invention had a far-reaching effect on the control of military forces in war.

The railway was first appreciated as a prime military factor by Prussia, and enabled the German armies in 1870 to concentrate and maintain superior forces against the French who were quickly ground into submission by a veritable war machine.

The rifle came to prominence in the Crimea, where it gave the British an advantage over the Russians. That rifle was the *Minie*, in which the objection to rifles, namely the physical effort required to ram the bullet, was cleverly overcome by an ingenious invention.

The first breechloader to make its mark as a battle-winning weapon was the needle-gun of the Prussian Army, which decided the fate of Austria in the decisive victory of Könniggrätz, every bit as much as the strategical maneuvers of Von Moltke.

During the last decades of the nineteenth century, the efficiency of the rifle (developed by invention into the small-bore, smokeless, long-range magazine weapon) is nowhere better exemplified than in the battle of Omdurman. On that occasion, by all the so-called rules of war, the British force of 20,000, with backs to the Nile and 1,000 miles from their base, should have been annihilated by the overwhelming numbers of the Dervish Army, but instead they won a crushing victory at small cost in a few hours, due to the power of the modern rifle.

At sea, in the Civil War of the United States, the first fight between ironclads, *Merrimac* and *Monitor*, took place; and a new age of sea warfare was brought into being.

Twentieth Century

With the twentieth century, war assumed a greater complexity and a vaster aspect. The first national struggle was the Russo-Japanese War, where several matters of interest merit attention. The railway was again seen to dominate strategy. The Japanese naval victory of Tsushima was the decisive battle of that war; and it was won, for the most part, by superiority of equipment—in other words, by superior machinery of war. For the first time in military history, the machine gun played a dominant role as a tactical weapon of the greatest potency and potentiality, but

the lesson of the machine gun taught there by hard fact was not fully understood by the staffs of European armies.

In 1914 we had the first world war, where we find many inventions embodied in new machines and new weapons. A few which influenced the fighting will be mentioned. These are: the machine gun and barbed wire; the internal combustion engine leading to air power, motor transport, submarines, and tanks; oil fuel on land and sea; the torpedo; wireless telegraph; gas; and centrally controlled massed gunfire.

Casting the mind's eye over the course of this vast struggle, one cannot but note the process of warfare becoming more and more a matter of machinery. This was due, paradoxically, to invention causing a time deadlock, during which the industrial resources of the nations, under the urge of self-preservation, gave opportunity for all to arm to the maximum of their capacities. Nothing excites invention more than the fear of death.

Air Power

In the decisive west, railways had concentrated millions on the battle front, to find not decision but stalemate—for rifle and machine gun, combined with barbed wire, held the antagonists face to face in mud and blood for 4 years. Behind these immense static fronts, the wheels of industry became the wheels of war. As never before in history, as never even contemplated, warfare depended on machinery and the inventor's brain. The internal combustion engine appeared as a new and powerful factor. At sea, it made the submarine a practical proposition, so efficacious that it nearly brought England to defeat—a situation to be repeated in World War II. On land, it brought motor transport into being, displacing the horse for many duties and supplementing the railway, and became a main link in any system of military transportation. It gave birth to the tank as a revolutionary weapon on the battlefield and one of the chief instruments that broke the deadlock caused by barbed wire and machine gun.

The airplane and the growth of the formidable forces of the air are due to the internal combustion engine. Prior to 1914, the early models of aircraft, which staggered through space to the incredulous amusement of generals, evolved in the course of that struggle into a new and potent arm of the fighting services. First used for reconnaissance to solve Wellington's problem of seeing behind a hill, it then developed into an aerial eye for the direction of artillery fire; and finally became a weapon on its own account, dealing out destruction by bomb and machine gun. Naturally these activities led to fighting in the air and struggle for air supremacy. To achieve success in these new spheres of warfare demanded new methods and better machines, which entailed greater and greater calls on the inventor, the scientist, and industry. Of the innumerable examples that can be given, consider the ingenious solution to the problem of firing through the propeller by using liquid pressure to synchronize propeller rotation to gun action so that discharged bullets would not strike revolving blades.

In 1914, wireless was a new thing and a wonder. By sea, land, and air it developed quickly through stress of war into an indispensable means of communication. By wireless telegraph, the Admiralty kept in touch with fleets at sea. By wireless telegraph, the fire of artillery could be controlled from the air.

Gas

In World War I, the use of noxious gases on a decisive scale was used for the first time, and in the last stages of the conflict, was the major casualty producer on the western front. The use of gas raised many problems in manufacture; storage; transportation; and projection. In reference to

the latter, three chief systems were employed—cloud attacks from cylinders; gas shells from guns; and gas in drums discharged from projectors.

Gas entailed inventive thought in making defensive arrangements: gas masks, defensive clothing, chemical antidotes, and gas-proof structures.

The most significant fact in connection with gas warfare is the negative one that its use was avoided by the belligerents in World War II; which is no reason for assuming it will not be used in World War III.

World War I was essentially, on land and sea, an artillery struggle. In this, the inventor and the engineer played a dominant role, and to illustrate this, two items are mentioned. At sea, the method of director-control enabled the fire of a ship's armament to be centrally controlled. On land, a system was invented of recording the sound of guns firing and shells bursting so that fire could be ranged on enemy batteries without visual observation.

So one could go on and on giving examples of invention and machinery used in World War I. During this period on Salisbury Plain, a young scientist flew an airplane for the first time by wireless telegraph control from the ground.

World War II

World War II opened with battle machinery being launched into sudden and devastating action. The German armed forces—dive bomber, armored fighting vehicle, mechanized artillery, and truck-borne infantry—struck down self-confident Poland with a single lightning stroke. The German blitz was on. If Poland had been blind to the new machinery of war, so were France and England until rudely awakened from a phony dream in the spring of 1940. In part, this was due to the mesmeric effect of the Maginot Line, an ingenious construction, embodying the highest engineering skill, which was not misplaced but misused. Designed as a static counter to the dynamic of mechanized battle, it was falsely looked upon as a shelter behind which to crouch, rather than a springboard for a counter-stroke. So France expired, and Dunkirk became historic.

The sea strip, where the Royal Navy ruled, presented an impassable obstacle to any German invasion of England, provided that air supremacy was not lost to the invader. How it did not pass, has been written in the skies forever by the *Spitfire*. That machine of war, combined with the ingenious niceties of radio-location, was the instrument of victory. Without the necessary tools, ready at the right time and place, the war would have been lost and the course of history utterly changed—for the instruments of modern war cannot be improvised.

This air victory gave a breathing space, as did the static front in World War I, for the forces of the world to be gathered into a vast war machine. With the United States joined in the conflict, the ebb of fortune turned to a flood of liberating power that flowered from invention and industry.

Conflict of Machines

In a global conflict on so vast, so colossal a scale, the whole cannot be appreciated until the mind, as it were, withdraws to a far point from which to watch the drama on a world stage, set with the destructive machinery of battle in furious and clashing collision. The reflective man will sense inventive mind in operation within and around these multifarious engines of war, and perhaps wonder why such human effort and ingenuity could not have been put to better use.

Approaching the details of the new weapons of war in order to give examples, the difficulty is one not of search but of selection. It can be truly said that World War

II was a conflict of machines. Governments, national leaders, high commanders, all had their pet and personal scientists to tell them what the long words meant, to propose countermeasures to enemy ideas, and suggest new ways of ingenious destruction. The slogan went, "Have a scientist on tap but not on top"; but sometimes it seemed as if the scientists were on top.

Early in this article it was stated that war tended toward two aspects—protection and power to strike at a distance; and so under these heads, some details of the machineries of war will be described.

Protection

In reference to protection, most troops and many civilians wore steel helmets. Gas masks were provided on a national scale. Across Europe stretched immense systems of static defense in steel and concrete such as the Maginot Line, the Siegfried Line, the Atlantic Wall, and Great Britain's coastal defenses. One recalls the sinister Todt Organization using forced labor from enemy countries for construction work, after the manner of the builders of the pyramids.

In naval warfare, the armor of ships had become an engineering problem of the greatest importance as exemplified by the *Bismarck's* resistance to bomb, gunfire and torpedo. On land, the armored fighting vehicle was the spearhead of battle. In the air, armor and body armor were introduced to protect the crews of aircraft.

In the cities open to air attack, great systems of shelters of varying efficacy were designed and constructed for the protection of the civil population. Vital localities were concealed by large-scale smoke screens; and housewives learned chemistry through instruction in anti-gas defense measures. In the medical profession, scientific research created new substances to fight diseases which menaced armies in war, and new techniques were used for the care and recovery of the wounded, such as blood transfusion in the areas of actual conflict.

Striking at a Distance

Under the aspect of striking at a distance, the internal combustion engine with track propulsion enabled heavier guns to be used in mobile fighting, and at the same time, the range, weight, and power of shells were increased.

Far outranging the gun, were new missiles in the shape of rockets and jet-propelled flying bombs which opened up new spheres for future development, the end of which no man can foresee; the special characteristic of these missiles is the ability to control their direction while in flight.

At sea, the submarine's range of action and under-water endurance had been increased since World War I. The German snorkel enabled submarines to recharge batteries under water and remain submerged for longer periods. The torpedo has become more potent with improved explosive and electric propulsion that left no surface wake to reveal its sinister approach. In the air, not only had speeds been trebled and armaments improved, but the radius of action of aircraft had been so extended that the strategic concepts of air warfare had altered radically. Added to these were new scientific inventions which had revolutionized the accuracy of bombing and given the bomber enhanced powers of flying by night.

In reference to the man-killing effect of all the various types of missiles used, the chief factor remained bullet and fragmentation, popularly termed shrapnel. In the destruction of material, new explosives and gigantic bombs from the air produced conditions of devastation, undreamed of before in the history of man. To the disruptive force of high explosive was added the fire terror, caused by incendiary shells and bombs producing high temperatures and being almost inextinguishable.

New Weapons

A few inventions and weapons will now be cited to exemplify some of the new instruments of war.

Radio and Radar

Since World War I, wireless telegraph had advanced in efficiency and radio telephony was added to communication by code—being used, among other ways, for intercommunication between tanks, aircraft, and ships.

Electromagnetic beams were used to guide aircraft by both sides, leading to a strange intellectual struggle between opposing scientists. The radar echo was one of the greatest secrets of air defense Great Britain possessed at the opening of war; and the application of this principle led to the marvel of the *H2S* apparatus, whereby the pilot of an airplane could see by night or in bad weather a sort of illuminated chart of his target area allowing his position to be fixed and target indicators dropped. This was made possible by the *Magnetron* valve, which Marshal Harris, of the Royal Air Force, described as, "One of the most brilliant inventions of modern science."

Radar was not confined to air warfare. At sea, it was a factor in the Royal Navy's decisive victory over the Italian fleet at Matapan.

Mines

As in World War I, mines were used extensively at sea but with ingenious improvements. The German mine was an alarming threat in the early stages of the war and led to ingenious countermeasures. Sea mines from the air were a novelty, and as many as 50,000 were dropped by British aircraft.

On land, due to the advent of the armored fighting vehicle, the mine leaped into importance. Land mine fields were laid on a grand scale and had a tactical influence on the battlefield. Great ingenuity was displayed in mine construction; and perhaps the most diabolical was the antipersonnel mine that leaped into the air before exploding. The land mine produced countermeasures—detectors, grapnels, and specially equipped vehicles such as the flail and the disc tank.

Recoilless Gun

This weapon has the merit of simplicity and thereby attracts one's attention. By just abolishing the breech of a gun and allowing the gases of the propellant to escape freely, carriage-weight was reduced so that a 15-pound shell could be fired 4 miles by equipment weighing only 112 pounds.

Flashless Propellant

Since World War I, efforts were made by all nations to achieve a flashless propellant, the advantages of which are obvious, and this was accomplished.

The Shaped Charge

This was an astonishing technical achievement, whereby a high-explosive charge contains a metal-lined cavity. The charge is projected at the target and detonated outside it. The force of the detonation drives the metal liner forward at a phenomenal velocity of approximately 30,000 feet a second compared with an average remaining shell velocity of 1,000 or 2,000 feet a second. The effect is that the metal liner becomes a stream of particles of supreme penetrating power. The United States Army used it as an antitank projectile fired from the *bazooka* projector by a single man for the destruction of tanks and concrete defenses.

VT or Proximity Fuze

The problem of designing the perfect fuze to explode or detonate a shell or bomb at the most efficacious point of the trajectory was not solved until World War II.

This was done by the invention of the proximity fuze, which is, in fact, a minute radio transmitting and receiving device which broadcasts a continuous signal, the return echo detonating the charge at the appropriate distance from the target. First used by the United States Navy in the Pacific, it dealt successfully with the Japanese dive bomber. Next, it was used to tackle the flying bomb in England. It appeared on the Continent during the last stages of the war. General George S. Patton, writing to a friend in the United States, said of it, "The new shell with the funny fuze is devastating. I think when all armies get this fuze, we will have to devise some new form of warfare."

German prisoners were unanimous that they had never been subjected to such crippling fire. The United States Army Ordnance has said of this fuze, "The radio proximity fuze was one of the outstanding scientific products of the war."

The Whale of Mulberry

This has been called one of the finest of engineering achievements. By the ingenious arrangement of its four huge legs, which could be moved independently up and down, it was able to be towed across the Channel and quickly fixed in position despite the contours of the sea bed.

Little David

Born too late to take part in the war, it was the world's biggest mortar, with a 36-inch bore and capable of throwing a 2-ton shell many miles.

ENIAC

The Electronic Numerical Integrator and Computer was developed by the United States authorities for dealing with the complex mathematical calculations the weapons of modern warfare entailed. Among its other capabilities, it could perform 10 million operations of addition and subtraction of 4-figure numbers in 5 minutes.

The Atom Bomb

Little need be said but to mention this devastating missile, for its general effects are known to all, and its inner mysteries of manufacture and operation a secret for specialized scientists. But it is of interest to the public to note that the atom bomb was not a sudden invention by one man, like the *Minie* rifle, but the result of the growth of scientific knowledge through the years. It is worth while, therefore, to note the main historic events that led to its creation. At the close of the nineteenth century, Becquerel's and Curie's discovery of pitchblende radiations, and J. J. Thomson's postulation of the electron altered the Victorian concept of the atom from an ultimate pellet of matter to an electromagnetic world. Einstein, taking note, dived into a sea of symbolic logic to emerge with an equation which related energy as equivalent to mass multiplied by the square of the velocity of light. In that thought the atom bomb was born.

In 1902, Rutherford suggested that radio activity might be due to the breaking up of atoms. Seven years later, he attacked and altered the stability of the nucleus of an atom.

The physicists of the world were now busy on the exploration of the atomic system. The press nosed in and the public began to imagine that the disintegration of one atom implied the sudden disintegration of the earth.

In 1932, Chadwick discovered the neutron, which in due time was to prove the key to the atom bomb.

In January 1939, Niels Bohr of Denmark crossed the Atlantic to discuss atom politics with Einstein. He informed certain persons in the United States that refugee scientists from Nazi Germany stated that the nucleus of uranium atoms might be

split by neutron bombardment. This nuclear fission would release other neutrons and lead to chain reaction.

United States scientists got busy, and, in March, the United States Navy Board held a conference to discuss the possibility of an atom bomb. By 1940, United States scientists had the requisite theoretical knowledge to attack the problem of production. By 1942, the United States, having been drawn into the war, had turned its vast industrial and scientific power to producing atom bombs. It was decided to make the bomb of plutonium, of which element there was only one milligram available in the country, for it was an element that did not exist naturally in the earth. They proposed to make the element in sufficient quantities for their purpose. The plutonium was to be made from uranium by an uranium pile, where lumps of that metal were distributed in graphite which acted as a moderator of the activities of neutrons from the radioactive uranium. An experimental pile was working in the squash court at the University of Chicago in December 1942. For the first time in history, atomic power was being controlled by human beings.

This pile enabled chain reaction to be studied, while immense, novel, and extremely complicated operations in science, industry, and engineering were undertaken to establish the plutonium production plant at Hanford, Tennessee. This installation was operating in 1945, and in August of that year, the first atom bomb disintegrated over Japan.

Having the required plutonium, it may well be asked how an atom bomb is made, kept, and exploded. If the answer in exact detail is a jealously guarded secret, the answer in general terms has been given to the world. When plutonium atoms discharge neutrons, it does not follow that the freed neutrons always split a neighboring atom. They escape in various ways, but that escape is governed by the mass of plutonium—the greater the mass the less escape—the less the escape, the more atoms are split. Therefore, there comes a critical mass when the chain reaction of splitting atoms blows everything sky-high. The critical mass is one of the secrets, and is between 2 and 220 pounds.

It follows that plutonium must be kept in amounts of less than 220 pounds and to explode it, two small masses have to be brought into conjunction—the combined amount being equivalent to or greater than the critical mass. When the first trial bomb was successfully exploded in Arizona on 15 July 1945, a new age entered with a bang—a bang in which by the nuclear fission of matter, one atom bomb released energy equivalent to the chemical explosion of 1,000 two-ton blockbusters of TNT.

In the development of the atom bomb in the United States, the British played their part by pooling their scientific knowledge and techniques. British scientists formed part of the central directing body at the Los Alamos Laboratory; and the value of their work was recognized by the United States Government in these words, "Chadwick was the head of a British delegation which contributed materially to success."

Conclusion

This brief survey of *Invention: Machinery and War*, gives an integrated aspect of the mechanical side of fighting that arouses ideas in the reflective mind, and of the many that do arise several will be discussed.

1. It is noticeable that the rate of progress of the weapons and mechanism of war is not a steady increase but an acceleration. For tens of thousands of years, the weapons of men were the club and stone; for thousands of years the spear, bow, and buckler; for hundreds of years, cold steel, musket, and muzzle-loading cannon. Then new inventions and new machines of war came into being every decade until

the present, when some improvement or new device is invented year by year. It is natural to think that man has come or is nearing the end of his ingenuities; but this thought has often been expressed before and always proved to be incorrect.

One can only wonder, perhaps with misgivings, what the future has in store as weapons for those world wars that are to be.

2. The accepted principles of war, when considered as guides for solving military problems, whether in grand strategy or minor tactics, must take cognizance of weapons and warlike machinery. For instance, in assessing the strength of a force, whether at sea or on land or in the air, the mere counting of numbers is not sufficient for a true judgment. The strength of an army at a decisive point will not be estimated by answering how many men are required, but how many men and with what weapons.

3. The greater and greater importance of the instruments of war entails forethought and preparation. Readiness in armament, both in quality and quantity, becomes essential to survival in a world of men whose main characteristic is fighting for existence. Requisite machinery for war saves the wastage of young lives—so let us be prepared. Requisite machinery for war prevents war—so let us be prepared.

4. The weapons and machinery of war have become so vast and complex that their full development can only be attained by states or groups of states large enough and rich enough to obtain the necessary raw materials, and possessed of science and industry developed on a comprehensive and all-embracing scale.

It follows that the small nation by itself is of little account against a giant antagonist.

In other words, the growth of war machines tends to integrate nations into larger congeries of states; and so, small wars will die away into magnified police operations. The era of global war has come to stay. Maybe, more and more terrible weapons will, in the end, make belligerents realize that the avoidance of war is the best policy. Maybe not—at present, let us be scientifically and industrially prepared.

Since we have entered an era in which technical developments mean as much to defense as numbers in manpower, industry and science face a great challenge. The nation that depends upon masses of men, however brawny and well-trained, but equipped with mediocre or out-dated weapons, can be defeated by a smaller force with superior weapons and equipment of which they are masters. I am confident that our tremendous reservoir of know-how in chemical science will continue to give us the technical means to meet and surmount our possible enemy's greater manpower.

Major General E. F. Bullene

Battle Cunning

Digested by the MILITARY REVIEW from an article by Major D. R. Dalglish in the "Canadian Army Journal" July 1953.

THE aim of this article is to stimulate fresh thoughts and ideas on the subject of battle cunning.

What is meant by battle cunning? The Oxford Dictionary says a ruse is a "stratagem, feint, or trick."

A battle-cunning soldier may be defined, therefore, as a man who is trained to outwit and outthink his enemy, either by a subtle tactical maneuver or by the surprise use of his weapons, or both.

Used Throughout History

Many a stratagem, or *ruse de guerre* as it was known in the past, has been used by fighting men of every race since the dawn of time. In many cases they were successful, or at any rate only those actions that were successful, were recorded and handed down to posterity by the chroniclers of old. Many a battle and foray was won by surprise, that oldest principle of war. Many a ruse was not "in the book," so to speak, and some were far from being carried out according to the Marquis of Queensbury's rules, however, war then was never a particularly gentle sport and even in the days of chivalry, quarter was seldom asked for and rarely given.

Warfare under modern conditions is no exception, and within reason, no holds are barred. On looking back into history, many an interesting story can be found to illustrate what is meant by battle cunning and several examples are described here.

Battle of Hastings

At the Battle of Hastings, William the Conqueror was making little headway in his attacks on the well-entrenched Britons who were holding a strong defensive position behind stockades. William, therefore, resorted to a trick. He ordered his men to feign a retreat.

The Britons, thinking they had triumphed, swarmed out of their positions and rushed forward. When they were well out in the open, the Normans turned on them and won the day.

During the Crusades, a long, drawn-out campaign was being fought between the Christians of Europe and the infidels of Sala-a-Din. The Crusaders held a castle in Syria—the *Krak de Chevalier*, a formidable fortress and almost impregnable to a direct assault.

The Saracen spies had learned that reinforcements were expected to reach the castle at a given time. Therefore, Sala-a-Din ordered a body of his men to dress as Crusaders and to try and take the defenders by surprise. This, they did successfully, the drawbridge being dropped by the unsuspecting guard and the castle rushed. As a matter of fact, it was the only time that the famous castle was ever captured and it took this clever ruse to do it.

In 1314, at the Battle of Bannockburn, famous in Scottish history, the Scottish forces under Robert the Bruce had taken up a defensive position, with their flanks well protected by natural obstacles. The Scottish commander, realizing that it was unlikely that his tough pikemen could withstand the direct assault of the heavy and numerous English horsemen, hit upon a plan. He ordered his men to dig holes in the ground on the only possible approach and to camouflage them with sticks and grass. The cavalry charged and came to grief as their horses stumbled and fell into the hidden pot-holes. Needless to say, the Scots won a great victory. This action

can be compared to a modern tank force rushing blindly onto a hidden mine field.

British Examples

At the Battle of Fontenoy, in the eighteenth century, the British regiments were drawn up, in their scarlet array, a short distance from the French. With the characteristic chivalry of that age, the British commander stepped forward, swept off his hat and said, "After you, sir." He meant that the enemy had the honor of the first volley. They duly took the opportunity offered them, thinking it an advantage, but having fired, the black smoke blew back into their faces, blinding them momentarily. The British, seeing their opportunity, carried out a spirited bayonet attack and won the day. It is thought to have been a calculated trick—the officer having noted carefully the direction of the wind!

To come to more modern times, it is strange and disconcerting to think that the British Army continues to learn from the tactics of its adversaries and is slow to think them out for itself. The German soldier was a clever tactician who did not get too stereotyped and was always trying to vary his methods of achieving surprise, often to our discomfiture. He was known as a "dirty" fighter, and up to all sorts of tricks. This was probably true in many cases, but he could be termed, also, an original and quick thinking fighting man. The Japanese soldier, too, had a name for low cunning in the jungle, but, having learned his tricks, which he repeated often with little variety, our own men got to know what to expect and how to counter them—"once bitten, twice shy," to quote an old saying.

The story is told of a patrol of ours which "bumped" a Japanese patrol in Burma. The Japanese turned and fled down the trail, closely pursued by the exultant Britishers, who were drawn into a skillfully prepared ambush and only got out of a serious situation with great difficulty. This neat, and very old, trick was often used by the enemy and—it is pleasing to note—later by our own men, too, with excellent results. The Germans, also, have used this method to draw our tanks onto hidden mine fields and antitank guns.

Australian Cunning

During the seige of Tobruk in 1941, the 9th Australian Division, a veteran organization, had been cooped up for many months. The Germans, judging by some captured documents, had a healthy respect for them and expressed the opinion that they were some of the best and cleaverest fighters on the allied side. An Australian commanding officer once used a good trick on a German parachute brigade, which was holding a salient on the southwestern perimeter. He staged a feint attack on one of the few commanding features—in an otherwise very flat desert—and got his gunners to put down a substantial smoke screen. The parachutists got jumpy, thinking an attack was coming, and their defensive fire came down and all hell let loose. Every machine gun and mortar on the front opened up. The Aussies sat back and proceeded to plot every position and fixed line, as well as the exact location of their mortar and artillery defensive fire. They made good use of this information in a later attack. It is an idea that should be remembered.

Surprise is one principle of war that can be instilled into the minds of soldiers at all levels. It is so easy to get too stereotyped and to stick too rigidly to the training manuals. Many a ruse is never written down in them!

Conclusion

To conclude, the British soldier is, by his upbringing, a fairly clean and honest fighter. If he is to become a good *rusé*, the techniques of battle cunning must be given more study. The subject should be

given some study at all schools of instruction, irrespective of the arm, but particularly at infantry schools. All the lessons learned in the last war and in the Korean conflict must not be allowed to be forgotten.

On command post exercises, and on field exercises at the battalion and company level, greater emphasis should be placed on all aspects of surprise and battle cunning. The idea must not be allowed to creep in that because a certain tactical maneuver is unorthodox, it is, therefore, unsound and should not be tried. Provided no basic principles are broken, every encouragement should be given to commanders at all levels to think out new ways of doing old things.

The question that we must always ask ourselves is "How can I best outwit the enemy and surprise him?" If this is in the forefront of our minds at all times, there is little doubt that a more efficient all-around type of fighting man will be produced.

Scientific Management

Digested by the MILITARY REVIEW from an article by Wing Commander G. L. Lister in the "Indian Air Force Quarterly" July 1953.

MANAGEMENT has been described as "the sensible use of space, time, personnel, and matériel, to achieve a predetermined aim." This conceives a pattern of controlled relationship between men and matériels. It is equally applicable to all forms of organization and administration. Although the exercise of command in the armed forces implies a form of management, in most cases, and at all levels, it tends to be applied unconsciously, rather than consciously.

This "unconscious" state of affairs previously existed in industry and commerce, but the increasing tempo of the industrial era threw the subject into sharp relief, and brought about the introduction of scientific management. The benefits have been enormous, and it is high time that we in the armed forces gained consciousness, and derived some benefit from the findings.

Principles of Management

Many principles have been evolved since the study of scientific management began. Some are solely related to industrial organizations, and are not relevant to the armed forces. There are, however, seven basic principles which are vitally appropriate to the armed forces, and, within these, it is possible to recognize some of the features which are inherent in our leadership training.

Know the Objective

"Each and every part and subdivision of an organization should be the expression of a definite purpose in harmony with the objective of the undertaking."

This emphasizes the necessity for all efforts being directed toward a common end. The over-all function is the one which counts, and no mistaken loyalties to unit, branch, or department, should ever be allowed to divert effort from the main purpose.

All subdivisions must strive in harmony toward a single goal: the sole criterion of judgment should be of value to the armed forces as a whole.

Unity of Command

"All action toward the accomplishment of a given aim must be directed by one person."

In other words, "No man can serve two masters":

1. Each person should have only one immediate superior, and must receive instructions about a particular task or operation from that person only.

2. Each person should know clearly to whom, and for what he is responsible.

This principle is violated all too frequently. Well-known examples are, bypassing of subordinates, lack of control when a man has two superiors, and incoherent assumption of authority. This leads to uneven distribution of work loads, duplication, mistakes, confusion, and accidents.

Span of Control

"The number of subordinates reporting to a superior is governed by limitations of the human mind."

The number of subordinates that any person can direct efficiently is strictly limited.

In the more complex functions, the experts have generally agreed that no one man can govern more than five supervisory subordinates.

In the more routine functions, the number should not exceed 10, for example, a corporal should not be expected to supervise more than 10 airmen.

The breadth of the span of control is a variable one, up to the above maxima. The optimum number, at a particular time and place, will depend upon the peculiar features of each operation, and the conditions under which it is to be performed. This gives rise to what is known as the "span of attention," which is related to:

1. The individual responsibility of subordinates.

2. The distance between supervisor and subordinates.

3. The time available for supervision.

"To be efficient, a man should have a job which is whole and complete in itself, and within his physical and mental capacity."

This is another principle dealing with human limitations, this time from the point of view of the operative. His capacity, to carry out his work efficiently, is governed by the following features:

1. There must be a specific assignment of every function to one person.

2. There must be no overlapping.

3. All functions assigned to a subordinate should be specific and homogeneous.

4. Care must be taken that the functions given to any subordinate to perform should be within his physical and mental capacity. There should be a careful balance, to avoid either too much or too little.

These features argue that the duties, authority, responsibility, and relations of everyone in an organizational structure should be clearly defined, and be capable of being completely stated in writing.

Delegation of Authority

"Where responsibility is assigned to a person, it must carry with it the authority necessary to implement it."

The chain of authority must be carefully worked out. At all levels, it should be commensurate with responsibility. Responsibility is a privilege, as well as an obligation. It carries with it the right of decision, to determine what, how, when, where, and by whom the work shall be done, and to stand or fall by the results.

Insufficient delegation means:

1. Senior personnel spend time on detail work. As a result, they have less time for work correctly appropriate to their function, training, and capacity. Decisions are delayed, and "red tape" increases.

2. Decisions are made without personal or up-to-date knowledge of facts.

3. Initiative is stifled.

Too much delegation, brought about by delegating too far down the chain, produces the following anomalies:

1. The person deciding may be too low in the organization to understand its full implications.

2. His decision may compromise the over-all policy.

3. Decisions based on uninformed judgment are frequently unsound.

Discipline

We all should understand discipline. It is defined by the management experts as "consisting of obedience, diligence, energy, correct attitude, and outward marks of respect, within the limits fixed by contract between the organization and the employees."

Leadership

Wise leadership is more essential to successful operation than extensive organization or perfect equipment.

Functions of Management

Functions are closely related to principles. The principles must be strictly adhered to in formulating the functions. The functions are normally subdivided into five main headings.

Planning

Planning is sensible anticipation. It is action taken against the unforeseen as opposed to a passive attitude, like that of Mr. Micawber, of "waiting for something to turn up." This is subdivided into "Creative Planning" and "Routine Planning."

Creative Planning.—Here, we are back again on the A B Cs of staff work. Creative planning is briefly defined as "the scientific approach to the solution of staff problems, based on logical principles." This is normally developed around our well-known formula of: determine the aim; study the resources; consider all possible courses of action; select the best course of action; and determine the procedure of putting the selected action into effect.

Routine Planning.—This consists of the more detailed arrangements and allocation of tasks, to enable the creative plans to be given practical application. The routine planner's basic pattern is as follows: WHAT is to be done? WHERE is it to be done? WHO is to do it? WHEN is it to be done? WHY is it to be done? HOW is it to be done?

Organization

Organization is the framework or structure which must be developed and maintained to ensure accomplishment of the aim. It is the medium through which individuals, or groups of individuals, are united to attain a common objective. It is a continuous process that requires constant revision. The three steps toward successful organization are: making a complete analysis of the work to be done; creating a framework, suitable to the requirements of the work; and correctly allocating the resources available.

Directing

Neither of the foregoing functions are actually concerned with the accomplishment of the aim. To secure this, motive power must be applied. This execution phase of management is known as directing. It is the process by which directives are given to ensure the employment of the available resources in the most effective manner.

The method of application of the directing function is capable of separation into three broad stages: assigning the work; issuing orders or directives; and giving special tasks to subordinates to provide personnel with a wider field of interest and to develop their latent capacities.

Co-ordinating

This is the process whereby unity of effort among the people affecting, or affected by, the execution of decisions, is secured. It is vital in any organization

where extensive subdivision of work and responsibility is involved. Co-ordination is subdivisible into two planes: vertical co-ordination, which is achieved through the normal chain of command; and horizontal co-ordination, which occurs between those of equal status. This type of co-ordination is very vital, but is too often overlooked. It requires that individuals and groups must be capable of clearly visualizing and understanding the over-all organizational structure, and the precise significance of their own part in it.

Controlling

Controlling is the means whereby action, production, quality, and quantity are checked against known standards. This, therefore, requires that: standards shall be set; training shall take place, commensurate with the standards required; and checks and controls shall be imposed in a manner that will adequately ensure maintenance of the standards. The controls should be carefully employed to avoid duplication of effort, and adverse reaction on the part of those being controlled. Not too much: not too little.

Application of Management

We now turn to the methods by which the principles and the functions are to be effectively applied. This aspect of the study of management covers the familiar field of time and motion studies, which are means whereby we give optimum usage to space and time. More particularly, in the fields of industry and commerce, it also covers matériel handling, job evaluation, and costing. Finally, on common ground again, it is concerned with personnel relations.

Time and Motion Studies

First of all, let us discuss the definitions:

Time Study

A scientific analysis of the methods and equipment used, or planned, in doing a particular piece of work, development in practical detail of the best manner of doing it, and determination of the time required.

Motion Study

The science of eliminating wastefulness due to using unnecessary, ill-directed, and inefficient motions. The aim of motion study is to find and perpetuate a scheme of least-waste methods of labor. It consists of dividing work into the most fundamental elements possible, the studying of these elements seperately and in relation to one another, and from these studied elements, when timed, to build up methods of least waste.

It will be realized that time and motion studies, on which many works have been written, provide such a vast subject that we cannot hope to do full justice to them here. The most that can be done, is to quote the eight principal phases involved:

1. *Preliminary.*—Recording and analyzing existing conditions, for example, processes, equipment, arrangement (bench, desk, or hangar layout), matériel handling (use of space), and transportation, to determine whether the best and least fatiguing methods are being used.

2. *Collection of data.*—Breaking down the operation into its component parts. Recording findings on appropriate charts.

3. *Analysis.*—Making a critical study of all the "components," discarding those that are useless and inefficient and improving others until they are the best obtainable. This includes the improvement of methods, tools, and working conditions.

4. *Synthesis.*—Putting together these improved elements into the best combination, and establishing basic timings.

5. *Allowances.*—Determining the allowances for unavoidable delays and fatigue. Normal armed forces diversions would fall within this category.

6. *Write up.*—Drawing up detailed, standardized instructions covering the

equipment necessary, the elementary operations involved and their appropriate sequence, and the time involved for each.

7. *Application.*—Training personnel to perform the task in the manner and time prescribed.

8. *Control of Conditions.*—Maintaining requisite working conditions, equipment, and supply of matériels.

Job Evaluation and Costing

Although there are a number of oblique lessons to be learned under this heading, for the time being we will skip them. We must not, however, overlook them, as they are concerned with: the elimination of wasteful methods; the utilization of existing resources to maximum advantage; the maintenance of equipment at its highest degree of operational efficiency; the creation of correct establishments; and providing the right incentives to the personnel employed.

Finally, there is ample room within the armed forces for the creation of a real sense of cost consciousness, and a constant awareness of the need for appreciation of the cost to the government, and to our fellow taxpayers, in relation to the benefits to be derived from what we are asking or using.

Personnel Relations

So far, we have not dealt with the most complex factor in management, namely, the human element. All the foregoing is useless without well-being in the field of human relationships. Good personnel relationships imply high morale and wholehearted, spontaneous co-operation toward a common goal.

Here again, we are on much-trodden ground. We can do no harm, however, by a brief restatement of some of the rules, which, if correctly applied, will do most toward creating the correct personnel relationships:

1. Earn the respect of others.
2. Take a personal interest in subordinates, but avoid the fatherly approach, unless it is really necessary.
3. Give credit promptly, where credit is due; do not put it off until tomorrow.
4. Be fair and unbiased in your judgment.
5. Give punishment only when you are certain it is deserved.
6. Within the limits of security, keep subordinates fully informed about what is happening, and why. Where possible, give reasons for all orders.
7. Respect the views of others.

Conclusion

What does it all mean? There is a place for man-management in all fields in the armed forces. Whoever we are, it is our duty to ensure that we are, each of us, better than our opposite number in any enemy force. In a dynamic organization, we must be constantly alive to new developments, and extract from them all that is to our benefit. The fighting efficiency of the armed forces depends upon good management or expressed in another way—leadership.

The Officer Corps is the heart and soul of any military organization. It must be the reservoir of character and integrity, the fountainhead of professional competence, and the dynamo of leadership.

General Matthew B. Ridgway

Training for Operations in Wet Weather

Digested by the MILITARY REVIEW from an article by Lieutenant Colonel N. A. Malik in the "Military Digest" (Pakistan) August 1953.

WET seasons are common, in varying degrees, to all parts of the world. While rainy conditions may not prevail at the beginning of hostilities, it is certain that in a prolonged war, our Army will have to live and operate under abnormal conditions created by rain and wet weather.

It is common these days to find troops indoors engaged in individual or educational training on rainy days. This practice of deliberately avoiding outdoor work during wet weather has an unhealthy psychological effect on troops who may be required to fight in all types of weather.

The prolonged period wasted by allied troops in adjusting themselves to bad weather conditions on the Burma front, during World War II, is indicative of the value of peacetime training for monsoon warfare, as for other types such as snow, mountain, or desert warfare.

Fighting in wet weather has its own peculiarities, advantages, and disadvantages, like any other type of warfare. It is proposed to examine what effect wet weather and monsoon conditions have on normal training methods.

Physical Discomfort

The worst effect of rain is probably the personal discomfort it causes troops. The fighting efficiency of a soldier is considerably reduced if he suffers discomfort because he is unaccustomed to operating in the rain. This effect on their fighting efficiency can be successfully minimized if troops are inured to rainy conditions by having to train, and participate in outdoor exercises in peacetime, during both summer and winter rains. The following measures will also help:

1. *When troops are dug-in, as in static operations like defense.*

a. Dug-in positions must have overhead cover from rain; foxholes and weapon-pits must be kept as dry and cozy as possible.

b. Meals must be served hot. The frequency of a hot drink could also be increased, especially in the case of night sentries, patrols, and men employed in outposts.

c. Adequate warm clothing must be provided during winter, since lack of protection against rain in winter is likely to cause many casualties.

d. Troops should be kept under cover as much as possible while it is actually raining.

2. *When engaged in mobile operations.*

a. Troops not in contact with the enemy must be protected from rain as long as possible. It is essential that they be provided with raincoats and suitable footwear.

b. Troops going into action should be served with a hot meal. (A hot drink can always be arranged by using containers.)

Difficulty of Movement

The problem of movement during rainy weather in countries with undeveloped and limited road systems calls for special training. The use of motor transportation is severely limited and in many areas, out of the question. Any large-scale troop movement is, therefore, bound to be slow, as the road space is limited and there are no alternative routes from one place to another. The heavy slush and mud caused by rain makes movement on foot extremely difficult, and this, in turn, ultimately engenders a feeling of tiredness and boredom in the soldier much sooner than would be the case under normal conditions. When his mind is concentrated on

overcoming the difficulty of moving his feet, the soldier is apt to lose sight of the rules and formalities of a tactical move. In fact, unless particular care is taken by commanders at all levels, there is a danger that a body of troops may walk straight into an enemy position without noticing the latter's presence.

Visibility and Concealment

Range of visibility is greatly reduced during a downpour, and, if foggy conditions prevail, it becomes extremely limited. Foliage, used in the concealment of positions, lives much longer in rainy weather. It is not unreasonable to assume, therefore, that if the attacking soldier is soaked and feeling miserable, uneasy, and self-conscious, the area of operations becomes the defenders' paradise, and the element of "surprise" in defense is more easily achieved.

Maintenance of Equipment

Rain and wet weather cause quick deterioration in all military equipment. To keep equipment on the man or with the unit in serviceable condition will, therefore, require additional and persistent efforts on the part of unit personnel. All this, however, taxes the soldier's energy. Units operating under rainy conditions should work accordingly on some definite and carefully thought-out system of maintaining their personal and unit equipment and avoid using abruptly arranged fatigue parties for this job. Subunits should be employed in rotation on unit maintenance tasks, while regular daily checking and maintenance of personal equipment should be made a drill.

Physical Fitness

Since normal games are difficult to organize under prolonged wet conditions, and the resulting lack of physical exercise over a long period will adversely affect the fighting fitness of troops, alternative methods of exercising troops, such as tree-climbing, boating, and swimming, should be adopted. Troops should also be taken out on cross-country runs wherever possible. Rainy conditions must not be readily accepted as an excuse for inactivity.

During prolonged wet periods, limitation of visibility as a factor that may possibly affect the efficiency of small arms fire must be taken into consideration when planning any operation. A reduction in the range of small arms may have to be accepted and errors in the ranging of personal weapons compensated. Distances will be deceptive and the actual aiming of personal weapons may be difficult. As a result of these unusual and, therefore, disturbing factors, men will be inclined to pull the trigger at random.

This tendency can be checked successfully by taking troops to the classification range during wet weather and making them use their weapons under realistic conditions. This has, so far, been generally avoided, the accepted practice having been to sound the bugle as soon as it starts raining as though weapons were not meant to be used except when the weather is dry. This practice of avoiding work during rain has a bad effect on the training of the individual, and must ultimately result in inefficiency on the part of units on the battlefield when they are confronted with similar conditions.

Care of Weapons

Maintenance and preservation of weapons and ammunition will also merit very careful thought and planning.

If weapons and ammunition are not looked after properly, general deterioration in these usually results within a short period. This may have serious consequences, if speedy replacements are not handy. Regular and more frequent maintenance inspections are, therefore, essential when troops are working under wet conditions.

Administration

If the adverse conditions, created by rainy weather, are not to affect the men's morale, most of the aspects of unit administration, like cooking, sanitary arrangements, storage of perishable supplies and foodstuffs, night shelter for the men, washing and drying of clothes, care of animals, and the personal cleanliness of the men, demand very careful planning and much initiative on the part of officers and noncommissioned officers, and a lot of improvisation and ingenuity at all levels.

Conclusion

Operations under rainy conditions merit special study. Unless troops are familiarized with rainy conditions in peacetime training, their morale will suffer on the battlefield if they have to fight for prolonged periods in rain.

In peacetime training, troops must, therefore, be exercised in outdoor work in all types of weather. Adverse weather conditions must not be accepted as an excuse for confining troops to indoor work. Exercises with troops must be conducted in all types of weather with a view to achieving a standard where the disadvantages imposed by bad weather conditions are overcome by the troops themselves, and by improvisation, ingenuity, and initiative at all levels if they are to be prepared adequately for wartime.

New Soviet Strategy

Translated and digested by the MILITARY REVIEW from an article in "Die Deutsche Soldatenzeitung" (Germany) 5 November 1953.

THE greatest Soviet Army fall maneuvers since the end of World War II, have recently been completed in White Ruthenia and the southern Ukraine under the direction of Marshal Semën Konstantinovich Timoshenko. These maneuvers present a very good picture of the transformations occurring in the defense system of the Soviet Union and in its adjustments for meeting the threat of atomic weapons.

Purpose

The basis of the exercises was the assumption of a large army unit operating in a fully isolated manner in the rear of the Soviet Army and on its flanks in a fixed maneuver area.

A super-formation of motorized and armored division groups plunged rapidly toward a hypothetical enemy in the West, secured on all sides by speedy reconnaissance units—like a large fleet formation protected by destroyer and torpedo boat formations.

Without any doubt, the Soviets are transferring the squadron tactics of classical naval warfare over to land warfare.

Like a squadron formation, Marshal Timoshenko now allows his troops to fan out from the wedge formation into a frontal attack and then again close back together into an armored battering ram.

The traditional division of the total Soviet area into defense areas, as the framework of the Soviet defense policy, has been definitively abandoned.

The old military districts are, it is true, still operative as general staff administrative and military recruiting areas.

They no longer coincide, however, with the operational centers of the Soviet armed forces.

Operationally

Operationally, the Soviet Army is divided into seven army groups:

1. Northern Army Group with headquarters in Leningrad and offensive and defensive missions in the northern European and the Arctic areas.

2. The Western Army Group with headquarters in Minsk and its operational mission in western Europe.

3. Southern Army Group with headquarters in Odessa with its mission in the Balkan area.

4. Army Group of the Balkans with headquarters in Tiflis.

5. Army Group of Turkestan with headquarters in Tashkent for the southeastern Asiatic area.

6. Far East Army Group with headquarters in Vladivostok.

7. The backbone, both of the defensive and offensive planning, on the turntable between European and Asiatic Russia, the Central Army Group with its headquarters in Bryansk, southwest of Tula.

Each of these army groups, in case of war, will possess a very large amount of autonomous rights as concerns operational command, supplies, and the securing of reserves. The Soviet General Staff was motivated, in this organization, by the assumption that in a future war communications may, at times, be broken in the vast eastern areas by enemy action from the air and from the ground. The commanders of the army groups compare with the fleet commanders of naval forces, who have but a loose connection with their mother country and who, in their actions and decisions, have always been far more independent than the commanders of land forces. The whole of the gigantic area is divided into independent "compartments" as a defense against the threat of atomic weapons, similarly to the division of a ship into separate compartments by bulkheads as a protection against the danger of sinking.

Future Policy

Following the maneuvers in the southern Soviet area, Soviet Marshal Timoshenko, cavalry commander, outlined, at the Frunse Academy of Moscow, his new theory of "attritional strategy in vast areas." He said that the new army group organization has as its guide:

1. The first Soviet objective, in any future war, must be the avoidance of a fixed front.

2. In case of failure to effect a breakthrough, elastic tactics must be employed. Under no circumstances must the Soviet reserves be exposed to the risk of another *Verdun.*

3. A successful breakthrough must be exploited tactically, only. The enemy must be wiped out before he has had time to bring up his reserves. Clinging to an area or position is a strategic error.

4. The Soviet Union is in the position of a surrounded fortress. The advantages of the interior lines are best exploited by means of rapid and deeply echeloned lunges, with the objective of destroying the glacis of the enemy attacks, of unnerving the enemy, and, finally, of exhausting him; not the conquest of the enemy's home territory!

Marshal Timoshenko is, at this time, the commander in chief of the Western Army Group (West Europe) which is composed of the former military districts of White Ruthenia and the Balkan countries. In the great fall maneuvers, for the first time, the new concept was followed. Timoshenko said he adopted this policy, "as a result of the initial successes of the Germans with their armored groups and hedgehog positions."

Irregular Warfare

Digested by the MILITARY REVIEW from an article by Lieutenant K. S. Sheard in the "Australian Army Journal" June 1953.

THE article by Lieutenant Colonel George T. Metcalf, *Offensive Partisan Warfare*, MILITARY REVIEW, April 1952, helps to point out the potentialities of offensive partisan warfare, yet it would appear that the effort to remedy, in part, the lack of understanding of the capabilities of such warfare has not been entirely successful. The general survey, made before tactical use is considered, provides an introduction to the subject and, considering its briefness, adequately comments on the problems of high level planning for such operations.

Yet such planning, if based upon lines of thought which follow the article referred to, may not be as successful as it should. The tenor of the article would indicate that more stress has been placed upon individual aspects of partisan warfare, as defined by the United States Army, than has been placed upon such warfare as an integrated whole. Especially noticeable is the scant reference to field activities of a guerrilla nature—this, despite the fact that *Lawrence of Arabia* is quoted most effectively. It is suggested that the author had in mind partisan warfare in more settled areas, such as western Europe, where communities are located closely in a patchwork countryside, with good communications, and wide road and rail networks, which give every advantage to opposing security forces. Here, sustained activity on a large scale is almost impossible, and could be expected to occur only in immediate support of regular forces.

This tendency may result from a too-close adhesion to the given definition of partisan warfare. Lawrence called the Arab Revolt irregular warfare; and it is unfortunate that the developments of World War II, and of the Spanish Civil War, lead to the use of partisan as an adjective in this context. Lawrence's phrase seems preferable; a concept which automatically opposes itself to that of regular warfare, which, as it is known today, developed from the irregular warfare of tribal days. Irregular warfare, on the basis of this definition, includes all the factors of partisan warfare—guerrilla activity based on perfect intelligence, wherein the commander must rely on psychology and propaganda to a far greater extent than the regular commander.

This matter of guerrilla activity is stressed, because it would seem that the gains from partisan warfare are greatest when its other forms are accompanied by such operations. This is not to deny the strategical or tactical importance, to the regular commander, of these other activities. Rather, it is an attempt to see the picture as a whole, to consider irregular, rather than partisan, warfare. Probably the two most successful irregular operations in recent times were the Arab Revolt, organized by Lawrence, at first against the opposition of the Army, and Wingate's advance into Ethiopia from the Sudan.

In both cases, the forces were used more extensively than would seem possible if one's forecast was based on Colonel Metcalf's list of tactical uses.

Part of the failure of this section may result from the treatment, which appears, principally, to be from the point of view of the regular commander faced with the necessity of co-operating with and organizing partisans. It scarcely touches upon the problems of the irregular commander, although a convincing policy cannot be

framed without this knowledge of how and where irregulars work best.

Factors Affecting Irregular Operations

Therefore, it is proposed to consider further tactical capabilities and limitations of irregulars and guerrillas. Further consideration of other aspects of partisan warfare is not proposed, since these are adequately covered.

Terrain

The advantage of a comparatively unrestricted, as against a restricted, terrain is quite clear. The guerrilla wars of the twenties serve, particularly, to illustrate the disadvantages of operating in an area confined, either naturally, or artificially, within frontiers. The Kurdish revolts against Turkey, in the late twenties and thirties, failed when they were cornered in the mountains. Similarly, mobility of the Jebel Druze, during the revolt in 1925-26, was limited by the restricted terrain in which they operated. This was a prime factor in their defeat. Another was the abandonment of the early policy of mobility, which led to their defeat in the field by General Maurice Gustave Gamelin.

The second factor is the actual terrain. Guerrilla operations, like regular warfare, have been conducted in:

1. *Mountains.*—Restricted, as in the Rif and the Jebel Druze, and relatively unrestricted, as in Ethiopia. In the Rif, the Spanish were restricted successfully and, for example, at Anual, suffered losses of nearly 20,000 in casualties and prisoners. Eventually, lack of supplies and other factors, resulting from confinement within the restricted mountain terrain, forced Abd el Krim into the open in an attempt to link with anti-French forces. He was caught between the French and Spanish armies and forced to surrender. However, his breakout, conditioned, also as it was, by the situation in Syria and the possibility of internal crisis in France, illustrates the importance of the irregular commander timing his activities with external military and political events.

2. *Desert.*—Again restricted, as in Libya, or relatively unrestricted, as in Turkestan and Sinkiang. With the advent of motorized desert penetration and aircraft, the desert is no longer unrestricted; instead of being mobile, the guerrilla, because of his opponent's speed and power, is reduced to the defense of vulnerable fixed bases, as in Libya, the oases. With such loss of comparative mobility, he must, sooner or later, fight on the terms of the more highly organized enemy. Thus, in Libya, the Italians were finally able, in 1933, to subdue the Senusi, who had been conducting irregular operations against them since 1911. Similarly, it is doubtful whether Lawrence's campaign could be conducted today. This does not mean, however, that irregular operations, actively supported by regular forces, cannot be undertaken successfully.

3. *Jungle.*—Jungle country, provided that the area is sufficiently large, offers considerable advantages to guerrilla forces. Concealment is easy, both in operations and movement, and, with a sympathetic population, guerrillas can move freely in a manner which is denied to regulars. In such country, security forces operate under disadvantages which are seldom present elsewhere and under which it is difficult to achieve success. In fact, the country influences operations to such an extent that it might be said, with the exception of very large-scale warfare, that all jungle fighting partakes of the nature of irregular operations.

A consideration of guerrilla activities in Southeast Asia provides valuable information on guerrilla and irregular operations in jungle country. Both the earlier and the current campaigns in Indochina, and the present activities in Malaya, illustrate the points made above. The two latter campaigns, also, demonstrate

the importance of outside assistance to irregulars. The Vietminh, apparently getting more such aid than the Malayan terrorists, have, also, made greater gains. These campaigns, too, stress the importance to irregulars of timing their activities to fit in with external events; although, in this instance, bolshevism gave warning some time before of forthcoming trouble in Southeast Asia.

4. *Towns.*—Irregular operations in towns have been most successful, for example, the Druze operations in Damascus, but only, again as in Damascus, where mobility can be maintained. Here, the French were provoked into shelling the town, thus antagonizing the people, so that this course could not be continued. But the moment the enemy can blockade and attack the town as he likes, the guerrillas are lost, as in the Warsaw uprising.

Matériel

Irregular forces should not be so armed or equipped that their mobility is lessened, but, nonetheless, should be equipped to attack the enemy where he is weakest. For example, in Arabia the Turks were numerous, but weak in matériels. The Arabs had few men, but were quite strong in explosives and light support weapons, which allowed them to attack Turkish matériel without great loss of men.

Personnel

An irregular force is unlikely to be made up of the same personnel all the time—Lawrence's force varied continuously in both personnel and numbers. In the past, it often has proved difficult to stop personnel from following up a victory where, if it should be followed up, the enemy will be able to dictate the terms of battle. Further, locals are not often willing to cede their own area to the enemy for tactical reasons, in which case, the commander may have to fight, or else lose his personnel through desertion. Discipline is a difficult matter—it may sometimes be better to use a paid core of irregulars, who have nothing to lose by location changes, rather than the patriotic locals.

One more point must be made here. It has been proved often enough that a core of highly trained regulars will give strength, out of all proportion to their numbers, to the irregular force with whom they are operating. Particularly, was this noticeable in the composition of the Berber irregulars who held out against some 35,000 French troops. They had a few time-expired native soldiers, and a few deserters from the Foreign Legion, who provided valuable technical knowledge of French weapons and tactics.

Co-operation With Regulars

All these guerrilla revolts of the twenties, although much stronger and more united than Lawrence's Arab forces, failed. One of the main reasons was that they were operating without any support from regulars. Wingate's Ethiopian campaign, with forces consisting of one battalion of Sudan Defense Force, one battalion of locally trained Ethiopians—both fought tactically as guerrillas—together with native guerrilla forces, tied up 56 Italian and native battalions in the Gojjam area; while 71 battalions were occupied by, and smashed by, the Commonwealth forces advancing from Somaliland. Neither force would have fared so well, had the other not been in the field.

Conclusion

From these factors several conclusions can be drawn.

1. The irregular's essential need is for mobility, which enables him, with economy, to achieve surprise and concentration, as well as being the means whereby he can avoid battle where the regular army can deploy his superior resources. Lawrence spoke of his force as "a thing intangible . . . without front or back,

drifting along like a gas," whose aim was to force the situation, which was "all flanks and no front." The irregular must fight on ground he has chosen as a result of enemy advance over ground suitable for guerrilla action. The notable example of this, in the history of the British Army, is the defeat suffered at the hands of the Afghans at Jalalabad in 1842.

2. Irregulars must not defend a fixed position that deprives them of mobility and the choice of the scene of the action. Similarly, they should rarely attack a fixed position. For this reason, Lawrence abandoned the plan to attack Medina, and began anew his war of movement.

3. Irregulars operate better in an unrestricted terrain, preferably of mountain, jungle, or open desert type. The deserts of Arabia and Africa are no longer suited to such operations, if they are to be at all sustained. It may be argued that long-range penetration groups have operated successfully in this type of country, but, although their tactics can best be described as irregular, their constitution and operations seem unsuited to the habits of native guerrillas.

4. Irregular action without the support of the regular forces, no matter how distant, so long as it may be considered part of the same campaign, as again, in Arabia and Ethiopia, will almost certainly fail in the end—if only from sheer weariness, assisted by such weapons as propaganda and skillful amnesty, as in the Turkestan revolt against the Soviets in 1923-26.

5. A small core of highly trained regulars is of great benefit to an irregular force.

6. The irregular leader always faces greater problems of command and discipline, arising from the psychology of his forces, than does the regular commander.

7. Timing of irregular action is important; the more it can be co-ordinated with outside military and political events, the greater is the chance of success.

Weapons We Must Use

Digested by the MILITARY REVIEW from an article by Air Marshal Sir Robert Saundby in "The Aeroplane" (Great Britain) 27 November 1953.

THIS idea, that we should forego the use of a weapon or a method of warfare, not banned by international agreement, in the hope that if we do not use it, the enemy will be gentlemanly enough not to use it either, is by no means a new one. Indeed, it stirs several chords of memory.

On the outbreak of the last war, the strictest orders were given to the Air Force to avoid the dropping of bombs in any place where they could possibly kill or injure a German civilian, presumably in the hope that the enemy would accept a similar limitation in the operations of his bombers, and this notwithstanding the fact that the first act of war was the ruthless bombing of Warsaw by the *Luftwaffe* on 1 September 1939. After Hitler struck westward in May 1940, the destruction by bombing of a large part of Rotterdam did not seriously modify our attitude.

The French, indeed, whose Government was rotten with defeatism, carried this idea even a stage further. They were insistent that we do nothing that might provoke the Germans into bombing Paris. When Italy entered the war in June 1940,

our bombers were ordered to attack the Italian armies advancing in the Maritime Alps. But the French obstructed our airfields with trucks, and other equipment, and prevented our aircraft from taking off, on the grounds that if we bombed the Italian forces, it was probable that they would retaliate by bombing objectives in France.

If their leaders had such ideas, it was small wonder that the French put up no more than a token resistance and were swept away and overrun, not only by the Germans but also by the Italians.

War in the Air

It so happened that the war in the air, as far as this country was concerned, developed rather gradually. Hitler hoped that the occupation of Poland, the fall of France, and the withdrawal of our armies from the Continent with the loss of nearly all their arms and equipment, would convince us that we had no hope of achieving the objective for which we went to war. He believed that we should be sensible about things and come to terms with him. Even when we showed no signs of wanting to parley, he was convinced that a comparatively mild bombing attack would make us see reason. Not, therefore, until September 1940, did he begin to bomb us in real earnest, and by then, we were committed to fighting the Battle of Britain in our own skies, over our own heads.

It was not until after the Battle of Britain that we seized the initiative and carried the battle into the skies over Germany. It is true that our bomber force was small and none too well equipped at that time, since we had given priority in aircraft, radar, and training to Fighter Command, but it is at least arguable that, if we had seized the initiative in September 1939, when Germany was busy subduing Poland, the Battle of Britain might never have had to be fought. The Germans might have been thrown on the defensive in the air, not from the end of 1940 but from the very beginning of the war.

Lord Trenchard, in the debate in the House of Lords recently, said: "I say to your Lordships that if we base anything on the last war, and go into this war as unprepared as we did in 1939, if the enemy are ready to hit us in our land and we are not ready to hit them in theirs, the second Battle of Britain will be fought over our heads with the atom bomb and all that that means." Wise words indeed, and yet I think that the fact that the Battle of Britain was fought over our own heads was due at least as much to our moral unpreparedness—our political timidity in the use of air power —as to the material unpreparedness of Bomber Command.

Uncompromising Hostility

Since the end of World War II, we have had to face the uncompromising hostility of the Soviet-Communist empire. They refuse to co-operate with the free world. They cut off their citizens from all contact with the rest of the human race, and do their best to make them believe that we are their bitter enemies. Everything that we do is misrepresented, and used to stoke the fires of fear and hatred.

The rulers of the Soviet Union and China are determined to extend the rule of communism by force or fraud to every part of the world. They subsidize and support political unrest, foment industrial strife, foster colonial nationalism, and generally fish in troubled waters. They have instigated an aggressive conflict in Korea, and encouraged armed rebellions in Malaya, Indochina, and Kenya. But never, even in moments of supreme tension such as their attempt to blockade Berlin, have they dared to act in such a

way as to risk general war. The reason for this is obvious. It is because the United States has a great stock pile of atom bombs and a well-trained Strategic Air Command capable of delivering the bombs to their targets.

No one can believe that the Soviets or the Chinese fear Anglo-American sea power; it can do nothing that would cause them serious concern. And on land, the Soviet armies greatly outnumber any forces which the North Atlantic Treaty Organization could put into the field against them. And so we come back to air power. It is air power, with its threat of the new weapons of mass destruction, that has prevented the "cold war" from becoming a "hot" one.

There is nothing that the free world could do which would be so likely to bring about a third world war, as to convince the rulers of the Soviet Union and China that we should hesitate to use the atom bomb, or the hydrogen bomb if it is available, if we were attacked. If we are to succeed in avoiding war, it is imperative that no one should have the slightest doubt of our intention and capacity to use atom bombs and hydrogen bombs, instantly and effectively, if we are driven to it. And there is no more certain way, if war should come, of ensuring that the second Battle of Britain would "be fought over our heads with the atom bomb and all that that means," than by being unready or unwilling to use our own atom bombs immediately to carry the war into the enemy's skies.

It seems, therefore, most unfortunate that so eminent a war leader as Lord Cunningham should suggest that, if attacked, we would not instantly avail ourselves of the principal weapons of air power.

There were other instances during the late war of our refusing to make use of weapons or inventions, not because of a hope that if we did not use them the enemy would be kind enough to forbear also, but because we feared that if we used such weapons, we would give them away to the enemy, who would then develop them and use them against us. This was based, not on moral and political timidity, but on a kind of political and scientific caution.

The Price of Folly

A few years before the past war, we successfully developed a magnetic mine suitable for laying by aircraft. This new weapon alarmed those responsible for the safety of our vital sea communications, and they argued that, of all countries in the world, we stood to lose most by the production of such a weapon. It was, therefore, decided that we should discontinue this development, and keep the whole project as secret as possible, in the hope that the German scientists would not hit upon this simple and obvious device. The result was that the Germans, having secretly developed the mine, used it against us from the beginning, and it was many months before we were in a position to retaliate in kind.

Another example of this way of thinking was the development of the device to which we gave the code name of *Window*. This consisted of strips of metalized paper which, when dropped from an aircraft, produced a cloud of reactions on the enemy radar screens, confusing the picture, and making it impossible to plot the position of individual bombers. It also confused the radar instruments of the German night fighters, and did much to spoil their technique of homing on the bomber.

We invented this device fairly early in the war, and also developed a parachute by means of which packets of *Window* could be launched satisfactorily from an aircraft in flight. On emergence

from the parachute, the packets disintegrated and a cloud of *Window* strips was left in the sky, fluttering slowly toward the ground. Our tests had shown that this device was very effective in spoiling the technique of night interception and searchlight control. By the summer of 1942, we could have gone ahead with *Window*, and needed only authority for its quantity production and operational use.

It was then contended by certain influential people that if we used *Window*, the Germans would pick up the strips, and it would not be long before they discovered their purpose. They would be able to copy the device quite easily, and would then be in a position to confuse our night defenses. This, of course, could not be denied, and so we could not get permission to use *Window*.

Here I cannot resist quoting Sir Arthur Harris' remarks in his book *Bomber Offensive*. He writes,

The main objection to the use of Window, *which proved to be the most important and effective of all the weapons used against enemy radar, continued to be the fear of its effect on our own defenses. It was hoped that our own radar would be developed to the point where the strips of paper would not cause any very serious interference, but even so, defensive radar might never be quite so effective after its introduction as before. . . . There can be little doubt that if we had been able and allowed to use this weapon in the first months of 1943, we should have saved hundreds of aircraft and thousands of lives and would have much increased the accuracy of our bombing.*

The ban on its use continued until July 1943, when Bomber Command, after a long struggle, obtained permission to use it during the great series of attacks on Hamburg. These very successful attacks, which were carried out with small losses, clearly showed the efficacy of *Window* in confusing the enemy's air defenses.

The point here, surely, was the fact that by the middle of 1942, German air attacks on this country had almost ceased, while we were attacking Germany in full strength on every suitable night. The Germans were rapidly turning over the whole of their aircraft industry to the production of fighters for the defense of their homeland, and trusting to the automatic *V* weapons to enable them to resume the air offensive. We had much to gain from the use of *Window* ourselves, and very little, relatively, to fear from the German use of it. And, as we now know, the Germans did in fact know all about the effect of metalized paper on defensive radar long before July 1943, so that we should actually have given nothing away had we prepared it and used it at the earliest possible moment.

War-Winning Weapons Stultified

I am not, of course, advocating that we should always rush to use a weapon as soon as it has been developed. In World War I, we did just that with the tank, and the Germans did the same with gas. In both cases, what might have been a war-winning weapon, if withheld until it could have been used in sufficient strength, was thrown away. But that is quite different from denying ourselves the use of a weapon because we fear that the enemy, once aware of its possibilities, will use it against us. It is more than probable, anyhow, that the enemy scientists have been thinking along much the same lines as our own, and that they are already aware of the weapon or device.

To sum up, an enemy either has a weapon, or he has not. If he has it, and does not use it, that will only be because he believes that its use by us will be a serious disadvantage to him, and we should simply be playing his game by de-

nying ourselves its use. For instance, I can imagine the Soviets embarking on a third world war, trusting to their vast land forces to gain them victory and conscious of their inferior stock pile of atom bombs, piously announcing that they do not intend to use the bomb, and calling upon us, in the name of humanity, to follow their example. Such a plan would enable them to exploit their greatest asset, their huge armies and, at the same time, if we were foolish enough to fall into the trap, knocking from our hands the only weapon which could enable us to avoid defeat.

If an enemy does not have it, we will have the advantage of its use until he can capture, analyze, and copy it, probably a matter of several months and maybe much longer.

An Infrequent Happening

The only occasion when I can see any justification for not using a weapon or device is when we are so placed that its use would unmistakably confer a greater advantage on an enemy, which would normally occur only if we were in a defensive posture, and—most important—when there is good reason to believe that an enemy is unaware of the practicability and use of such a weapon.

The latter is a very difficult condition to fulfill, for it is seldom that our intelligence service can be confident that the enemy scientists are not as fully aware as ours of the military possibilities of any particular piece of applied science.

In principle, it seems to me always wrong not to use a powerful weapon, not banned by international agreement, in the hope that the enemy will not use it either. With regard to the policy of not using a new weapon because we fear to give away the idea to the enemy, this is very seldom justifiable.

All that we can hope to do in war, from the point of view of scientific development and weapon production, is to keep ahead of an enemy. If we decline to use the new weapons our scientists have given us, the probable result is that we shall lose our lead, and the enemy will be the first to make use of them, with any advantages that may accrue. In the case of weapons of such tremendous power as the atom bomb and the hydrogen bomb, now presumably at the disposal of all the great powers, it would be sheer madness for us to hesitate to use them if attacked, and madness even to let potential enemies believe that we should so hesitate.

Let us do our best to ensure that it will not be said of us, by historians and archaeologists digging in the ruins, *Quos deus vult perdere prius demantat.*

Wehrmacht Concept

Translated and digested by the MILITARY REVIEW from an article in "Marine-Rundschau" (Germany) No. 2, 1953.

IN GERMAN linguistic usage, *Wehrmacht*, both as a word and as a concept, is well understood, as is also its character, which is of a defensive nature. The word cannot, however, be translated into another language with complete retention of its meaning. For this reason, it is often found in Romance and Anglo-Saxon writings as a loan word.

Still, long after World War I, it was unknown in official language. Not until the fetters of Versailles fell off, did *Wehrmacht* officially denote the totality of all that served for the defense of the Fa-

therland. At the same time, the meaning of the word immediately expanded beyond the mere summation of Army, Navy, and Air Force, to a superordinate concept which then soon found its visible expression in *Oberkommando der Wehrmacht (OKW)*, signifying the agency which was superordinate to the supreme commands of the three individual component parts.

Organization

In so doing, the effort was made for the first time in Germany, to take account of the lessons drawn from World War I and the events which followed. At first, this effort was confined to organizational and administrative aspects only, that is, to the parallel combination of Army, Navy, and Air Force and the pooling of their shares of equipment to fit the limited means of the *Reich*. The establishment of an authoritative and efficacious superior command agency over the three portions of the *Wehrmacht*, did not occur in Germany before World War II, any more than in other places in Europe. Proper solutions were found for this problem in other countries—a good example was the Combined Chiefs of Staff of the United States.

A supreme *Wehrmacht* command should conduct war in direct and intimate cooperation with the political leadership of the state and from the vantage point of the highest echelon. It would be the duty of the *Wehrmacht* to decide the principal strategic objectives and missions and all secondary objectives stemming directly from these on the basis of the war regarded as a whole. At the same time, the questions as to whether, and how, they were to be realized—by ground, naval, or air forces operating separately or in combination—would remain open until, in the light of the clearly elaborated missions, the question of the means required could be posed and answered. These means should, then, always be handled as an indivisible whole regardless of the nature of the strategic and tactical missions they may be intended for at any time. Naturally, limited means would also lead to the limiting of many missions but on the basis of the conditions prevailing, principal stress could be laid on those combat forces, weapons, and other considerations best suited for use with the existing means without slighting the others—providing the command is really able to think as a *Wehrmacht* supreme command.

Fusion of Commands

The German Army manual, *Command and Operations of Combined Arms*, on the basis of the experiences of World War I, took the step from independent *contiguity* of arms to their *fusion* into one another. What was achieved, here, in the tactical domain, must today be done in a strategic and operational way if military leadership really wishes to make use of all the means at its command in a logical and intelligent manner. This second step is incomparably more difficult than the first. It requires that the persons in command rise above the service branches of their origin in their vision, to a plane of broad-visioned universality. Form is of a secondary order of importance. The chief requirement is, that the product of the ground, naval, and air combat forces be best suited for the particular task by a proper choice of the factors of both a qualitative and quantitative nature; that is, that the end result shall be a positive operating system of comprehensive and most efficacious mutual aid.

The history of the German *OKW* is not yet written, but it will show that its peacetime problems, under the existing circumstances, were difficult, but without any question, were well solved. The development and the equipment of the Army, Navy, and Air Force, were shaped and conducted in conformity with the political plans of the *Reich* administration.

Most of the resulting administrative problems, especially in the parallel combining of the *Wehrmacht* branches were solved, and mobilization plans organized. It succeeded, at the same time, in properly incorporating the armament industry, so that its human potential and—consequently, its capacity for work—were retained when mobilization was ordered. Full evaluation of its entire accomplishments must be reserved for history. The relation of the different branches of the *Wehrmacht* to the *OKW* was, briefly, about as follows: The Army had the largest share of personnel partly because of its particular numerical requirements, and because of the fact that it had been built up by Erich W. Ludendorff at the time when he assumed command over practically everything of military importance, to a point far beyond purely military requirements. It is quite understandable that under these circumstances, the continental concepts which had evolved through centuries of a great German history, made themselves strongly felt. The Norwegian expedition and the Western campaign had, it is true, been accompanied by many problems which could contribute to the broadening of the existing concepts. The Soviet campaign which was to bring great results was then just beginning. It was to be conducted in accordance with the continental concept and overshadowed everything else.

Air Force Development

In the case of the Air Force, the development was similar to that occurring in many other countries. It had overestimated its possibilities. This, in conjunction with its more rapid growth—one of the greatest accomplishments of German military history—caused it to lay claim to the independence of a separate branch of the armed forces, although all the prerequisites for this would not have been fulfilled. At the same time, it was the Air Force which had at its disposal the very best means and possibilities for the initiating of real *Wehrmacht* thinking, due to the natural versatility and capabilities of the airplane as a complement to and extension of the "classical" weapons from both the strategic and tactical points of view. For a clarification of this statement, it may be interesting to know that the majority of its commanders had come from the Army and were grounded in its mode of thinking so that in the short period of its development, a feeling for the necessity of a *Wehrmacht* command had scarcely arisen.

Navy Thinking

The Navy, on the contrary, because of the natural basis of its existence, was inclined toward a more *Wehrmacht*-like manner of regarding things—an attitude which the experiences of World War I, when the Imperial Navy, especially at the start of the war, was still fighting its own war, alone. The Navy was aware of the necessity of sure access to the Atlantic in case of any war against England. It immediately recognized, therefore, what the seizure of the ports and bases on the western French coast meant to it and to the war as a whole. For only from these, was any effective submarine warfare against England possible at all. It knew that England could be fought successfully only by means of attacks against her ocean supply routes. It was also clearly aware of the very close connection between air and naval warfare—and what it was able to do in co-operation with the Air Force was shown, for example, by the breakthrough of the Channel by the battleships *Scharnhorst* and *Gneisenau* as well as the cruiser *Prinz Eugen*. On the other hand, her heavy units were helpless steel colossi without the Air Force, as is shown most clearly by the fate of the *Tirpitz* which, because of lack of protection from the air, was sunk.

Since the Navy was convinced that a war could be fought only with the aid of a real supreme command, it would also, perhaps, have been able to contribute materially to it. But it was numerically too weak to assert itself successfully and, moreover, occupied a position somewhat in the background because of Hitler's policy which, originally, was directed eastwardly and not toward England.

OKW Control

As long as the German *Wehrmacht* as a whole, and in its parts, was fairly intact, the effectiveness of the control of the *OKW*, even in time of war, was wholly satisfactory. However, for its actual task —the determination and clarification of the great strategic objectives, especially in the war against England—it was never a success. That the Germans were capable, nevertheless, of genuine *Wehrmacht* operations, is evidenced not only by the above cited breakthroughs of the Channel, but is proved in a striking way by the occupation of Norway. In this operation, ground, naval, and air combat forces were successfully engaged in a completely effective combination. This operation was, of course, no original work of the *Wehrmacht*, but was due to the initiative of Grand Admiral Erich Raeder, and was prepared and executed on the basis of a special order of the *Führer*.

Pacific Warfare

The real nature of *Wehrmacht* warfare was first revealed, however, in the Pacific Ocean. There, after the beginning of the American offensive, there was practically an unbroken succession of very comprehensive *Wehrmacht* operations which were never of a simple nature, and which were always prepared and executed from a very high level. The Combined Chiefs of Staff had stationed, as local commanders of the United States combat forces, Admiral Chester W. Nimitz in the central Pacific, and General Douglas MacArthur in the southwest Pacific. Both were able to fulfill their missions without reverses of any consequence. The nature of the theater of operations, it is true, caused the share which fell to the naval forces, to outweigh greatly—especially in the matter of transportation and handling of supplies —that of the other services. It is noteworthy that this command fully understood how to recognize and formulate its missions correctly and then to execute them in a suitable combination of ground, naval, and air forces.

In view of the complexity of some of the operations, they would unavoidably have been doomed to failure if their command had been entrusted to the command of just one of the participating arms.

Rommel's Campaign

As an example of a campaign that was not planned and executed in accordance with the *Wehrmacht* concept, Field Marshal Erwin Rommel's fighting in North Africa must be mentioned. Although carried out on land, this campaign went beyond the original limits of an intended support of the Italian-African combat forces by ground formations for the reason that all of the supplies had to pass, for the entire distance, over an open sea or air route, exposed to enemy attacks. In addition to this, it was a coalition campaign, since it was carried on in Italian territory or in areas under Italian influence. Here the German *OKW* and the Italian *Commando Supremo* should have joined to have conducted the campaign in accordance with the *Wehrmacht* concept, by giving protective naval and air operations and by means of suitable measures against the English supply traffic passing around Africa. If it had then been possible to channel the Japanese attack of the end of March and the beginning of April 1942, into the Indian Ocean, then

into the interior of the Persian Gulf, and, finally, into the Red Sea, there would, very probably, have been a different outcome to the African operations.

However, in contrast to this, the allies, especially after the entrance of the United States into the war, were able to conduct *Wehrmacht* warfare on a large scale. In addition to the excellent naval feats of the Americans in the Pacific, stand the land operations of the Anglo-Americans in Europe. The nature of the theaters of operation on which the Americans fought, rendered any but purely *Wehrmacht* planning out of the question. The number of personnel and amounts of matériel available, made activity on a grand scale possible.

Joining the Parts

The strong emphasis that has been placed, in the foregoing, on *Wehrmacht* thinking, by no means signifies that one could, today, renounce either partially or entirely, the employment of the characteristic means of the individual *Wehrmacht* portions. They have retained their value entirely, for the practical solution of the mission is now, as before, incumbent on them. The secret of *Wehrmacht* warfare resides in combination, in the combination best suited to the purpose, and the employment of this combination unhampered by obstacles. The new weapons and service branches—for example, the air force, the technical units—the construction battalions of the Americans, the Todt Organization of the Germans—electronic navigation and others, are destined to lead out beyond the present too narrow confines of the "classical," individual *Wehrmacht* parts.

In the 1920s, "total war" was the slogan with which the new form of warfare, born of the experiences of World War I, was designated. It meant that war had again become a part of the entire nation. Today, also, all military planning must be "total." The day of the mere adding together and parallel union of combat forces and means of war is just as definitely over as is the day when the different nations were able to live independently of one another. The more the employment of highly qualified experts in all fields is a necessity, the more must every command agency in the place of many contiguous functions, put, in their place, the product, or speaking with greater mathematical accuracy, the integration of these functions.

Conclusion

Our first task is to create a homogeneous, coalition *Wehrmacht* out of the presently existing, total European *Wehrmacht*, co-ordinating the different national contingents as completely as possible. But it would be incomplete if, at the same time, the corresponding *Wehrmacht* command were not created. The way to this has already been blazed, and not without success, as the North Atlantic Treaty Organization maneuvers in the north have already shown. But much brain work still remains to be done before a universal *Wehrmacht* command of the requisite high order can be created.

If you are moving, please notify the MILITARY REVIEW, Fort Leavenworth, Kansas, of your change of adddess. Be sure to include your name, *old* address, and *new* address.

The Movement of Operational Reserves

Translated and digested by the MILITARY REVIEW from an article by H. J. Hopfgarten (major in the former German Army) in "Wehrkunde" (Germany) June 1953.

THE intention of a supreme command to form points of main effort necessitates far-sighted planning for the movement of operational reserves to aid in the planned main effort. These reserve units must be capable of traveling great distances and capable of rendering great striking power.

During World War II, the strategic situation on the German side seldom permitted the concentration of large bodies of reserves—except for single divisions. Even when the Germans were successful in assembling a certain number of units at the decisive moment for major attack operations, they lacked the operational reserves to help exploit the initial success.

In contrast, the allies were able to assemble, deep in the hinterland, units as large as armies for operational and strategic objectives. They were able to put these reserve units into battle at the decisive moment.

Thus, the German advantage "of the interior line," which makes possible the quick transfer of forces to all important points of the front, was canceled by the superiority of forces on the enemy's side. In this study, factors will be examined which, in the future, may be decisive in the execution of rapid shifts of operational reserves to points of main effort on the front sometimes many miles distant.

Armored Units

The vast extent of the German theater of war, especially in the east, seldom permitted them to assemble operational reserves. Since only armored divisions can be called decisive on the field of battle, only an assembly of this kind of division is of any value.

The Eastern front, with its large number of battle areas, made it difficult to pull armored units from the front. As a rule, the detachment of an armored division was considered only when it was no longer possible to postpone its rehabilitation with respect to matériel and personnel. This same situation also applied to infantry divisions which were tied down for years on certain sectors of the front. In fact, the lack of transportation and the scanty railroad network in the east, made the assembly of infantry divisions virtually impossible. Besides, their combat power against the Soviet troops, who had that all-important superiority in the number of tanks, was no longer sufficient to be able to intervene in a really decisive manner in a battle. When individual armored divisions were pulled out of the line, their rehabilitation, due to their miserable condition, took at least 4 weeks in spite of far-sighted planning on the part of the General Staff.

As previously mentioned, infantry divisions, whose transfer required additional means (motor vehicles or trains), no longer possessed the decisive value of the armored division. The engagement of airborne units, without their being coupled with corresponding armored forces, constituted only modest aid and was not justifiable. In the future, however, motorized infantry divisions with modern organization will certainly play a greater role as operational reserves.

Exploiting Operational Reserves

The calling of assembled operational reserves occurs either in an attack situation for the exploitation of a success which is taking place, or in defense for the pre-

vention of or the containing of a breakthrough.

The reserves are usually stationed hundreds of miles away from the place of their intended engagement. During World War II, uncertainty on the part of the General Staff created an atmosphere of confusion among operational reserve units, and those committed were hardly able to achieve more than a local success. During the Normandy invasion, the hesitation of the Armed Forces Operations Staff (presumably Hitler) in thrusting assembled armored divisions forward at the right time, showed a lack of decision and a sense of what was the correct place and time for decisive action.

Therefore, the main question for the supreme command is the "when and where." It is the mission of the troop command to shorten, by appropriate measures, the time required for the transfer and the guiding of the unit into the engagement area without undue loss.

Readiness for Marching

The commander of a unit to be moved usually will receive the order for departure with little or no advance notice, and the march route and objective will be unknown for reasons of military security. Nevertheless, an armored division should be ready for a rapid departure from 5 to 8 hours after receipt of the movement order. The prerequisite for this is to have the division up to full strength in matériel, personnel, and fuel.

Advance Party

Regardless of whether highway, rail, water, or air transportation is planned, the first measure to be taken is to assemble the men who will form the advance party. The advance party has the mission, especially when the transfer is being made to a center of a main effort on the front and combat is expected immediately after arrival, to ascertain the situation and to make preparation for the arrival and subsequent engagement of the unit.

Every regiment or independent unit of the division must place a small advance command group, under the command of an experienced officer, with the advance party. Command on the march rests in the hands of the regimental commanders, for only they are in a position to guarantee the undisputed execution of the transfer of the unit in the case of unforeseen events.

Unusual Events

In the course of a movement, problems arise which are not contained in any Army regulation and which require the presence of the commander. For example, in the winter of 1940-41, a group of operational reserves was being moved to the Balkans by way of Romania. In the framework of the operation, railroad transportation of the 11th Armored Division from Silesia to the Constanza area was prescribed. The division required the transportation space of about 110 trains and expected to be on the move from 7 to 10 days; during this period they would have no connection with the division command. The "Iron Guard" in Romania executed a *coup d'etat* as one of the companies was approaching Kronstadt in the Carpathians. The Kronstadt station had the appearance of an armed camp when the company arrived. Romanian troops and armed civilians manifested an expectant attitude toward the German unit, which had no idea of the political developments. The least incident would have led to a clash.

The alert company commander soon grasped the situation and put into action the following measures: briefing of the subordinate commanders and men on the situation; establishment of combat readiness with permission to fire being given only by personal order of the commander; occupation of the locomotive by an officer;

energetic dealing with the traffic service authorities with the hope of proceeding as soon as possible. The company was soon on its way without any mishap. This example, which is, of course, rather out of the ordinary, stresses the point that units on the move must not be deprived of their commander. It is only the commander on the spot who is capable of judging unusual situations rapidly and of meeting them correctly.

Events on the Eastern Front

After the conclusion of the battle of Kiev, the 11th Panzer Division was designated as the operational reserve of the South and Central Army Groups, which were located in the Berdichev-Zhitomir area. It had been pulled out of the front lines a short time before and was in the process of being rehabilitated. Its tanks were being re-equipped with 5-cm tank cannons.

The unit was to be employed in the framework of the southern jaw of the pincers in the fighting at Vyazma, which was about 435 miles from the area where the unit was then assembled. In order to gain utmost surprise, the unit was not scheduled to arrive in the combat area until 2 days before the planned offensive. There was only one practicable route available for the transfer, but there was no danger of enemy air attacks.

The motorcycle units, because of their greater march speed, constituted the leading march group, while tank and half-track units followed. These motorcycle units were able to maintain an average march speed of 18.6 miles an hour which, in view of the condition of the Soviet roads and the length of the journey, was a very good rate. It required 1 day and 2 nights to complete the journey. Halts and rests were carefully planned, with refueling and servicing of the vehicles being the major concern. Radio silence was maintained during the entire march.

Despite the conditions, the prescribed speed was maintained and the move was executed without incident. Under peacetime conditions and on good European highways, the 1st Panzer Division was able to average only 22.7 miles an hour on a march in 1938. In the presence of enemy air activity, when a unit is forced to travel at night, without lights, an average speed of 24.8 miles an hour is difficult to maintain, even with modern vehicles.

The moving of an infantry division poses entirely different problems, especially when various forms of transportation are employed. In October 1943, when the surprise capture of Newel by the Soviets threatened to split the Central and Northern Army Groups, it became necessary to rush the 329th Infantry Division to the threatened area. One regiment was moved by air, while the main body went by rail.

The results were very ungratifying. The units which were moved by air immediately went into battle, but by battalions rather than as a regiment. For 14 days, they were completely separated from the influence of the division. The tactical group and motorized elements reached the area in 1½ days, but the main body of the division, which moved by rail, did not reach the combat area until 2 weeks later. It was some time before the division was functioning as a unit again. This prevented a tactical decision from being gained in the area which might have been possible if a rested and powerful division had entered the battle.

Rapid Planning

An exemplary case of rapid planning and execution was the movement of a United States infantry division in the Ardennes offensive during World War II. This division was situated behind a quiet front sector in the area southwest of Saarlautern. The allied supreme command, having gained an accurate picture

of the engagement of troops and the direction of movement of German Army Group B, moved this division during the course of one night a distance of 100 miles, using large trucks and busses. This division successfully engaged the German Fifth Armored Army east of Bastogne. In contrast to this American movement, German armored divisions in the east were often obliged to execute marches of hundreds of miles which took several days to complete.

Lessons Learned

Based on the experiences of the command of an armored division or motorized division, the following lessons are to be applied in the transfer of forces as operational reserves.

The time and the objective of a march movement of operational reserves should be kept secret by the command until the latest possible moment. Radio silence should be maintained during the march. However, in order to deceive the enemy a number of radio stations should remain in the old area to conduct the usual form of transmissions. The advance party should be informed of its destination bit-by-bit during the march.

The march should begin in the gathering dusk of evening unless unusually bad weather prevails. Enemy air superiority and observation make it necessary to conduct all movements at night.

All vehicles should be camouflaged before the march begins since there is no time for camouflaging in case of a surprise air attack. It may be necessary to camouflage the tanks as supply vehicles. This measure requires time and matériel and must be done prior to the march.

Preparation

The advance party should be dispatched to the destination point considerably well in advance of the main body. The greater the time interval, the greater the amount of preliminary work that can be done in the new engagement area.

The preparation for marches should be an object of training for the division. When faced with an especially long march, it is not possible to hold the preparation time under 4 to 6 hours.

Rear services, especially the armor workshop companies, need about 24 hours or more. These companies are to follow the main body as a special march group. A rear division command post should be established and it has the mission of bringing to the division, in a body, the men returning from leave, from hospitals, or replacements.

March Routes

If several march routes are available, the division should be broken down into several columns. Only in this way can the considerable length of an armored division be shortened, and the length of time required for the march be shortened.

Air Attacks

Antiaircraft units should be assigned to all march groups, and especially to armored formations. It is the mission of the higher command to reinforce antiaircraft defenses at river crossings, in populated localities, and at mountain passes. This can be accomplished by means of a relay system of antiaircraft units. At times, even organic fighter protection will be necessary. In the case of a strong enemy air attack, every unit of the division must put into operation certain prescribed air defense measures, such as using cover or increasing the interval between vehicles, or temporarily increasing or decreasing the speed of the column. Directives concerning these defenses should have been given in the division's order for the march. Frequently the command will have to reconnoiter detours around crossings which have been destroyed.

Communications

In the case of radio silence, messages have to be carried by couriers. If higher command planning has been done carefully, it will be possible to receive and transmit messages by way of previously determined advance message centers. It is advantageous to detach some of the division's own personnel to these advance centers.

Organization

Motorcycle and half-track units should be combined in march groups and placed at the point of the march column. These units are able to travel at the greatest average speed.

Self-propelled guns and tanks should march in groups apart from other types of vehicles and on other available routes. However, the shortest march routes are to be assigned these units for reasons relative to time and fuel.

If fighting is not expected to be undertaken during the march, a tactical organization is not followed. However, if the higher command intends to throw the division immediately into battle from the march, then a tactical organization is to be employed at the outset of the march.

Motor Vehicles

In the case of major marches, a considerable number of measures must be taken to ensure the immediate servicing of vehicles during the march. The command should indicate stationary workshops for special reinforcement of the servicing companies.

Halts

All halts should be scheduled by the division command in the time schedule of the March Table. They are not for the purpose of rest but for the refueling and servicing of vehicles. All halts constitute a dangerous period when there is enemy air activity. This danger may be reduced by means of natural or artificial camouflage and an alert antiaircraft force.

Traffic Control

All modern armored divisions possess sufficient personnel for traffic control. This personnel should be sent out in advance with information concerning the probable critical points of the march route. If they are given a good description of the march route, they will be able to prevent portions of the march groups from taking the wrong route. Vehicles can be kept on the right route during movement at night if the subordinate commanders of the traffic personnel know the route thoroughly and are proficient in map reading.

Assembly Area

Portions of the advance party will assume the guidance of the units into previously determined areas when the units reach their destination. Only after all the units have arrived, is it possible to get the subordinate commanders together for orientation concerning the situation. The time lag for the arrival of the last portions of an armored division should be about half a day, depending, of course, on the length of the march columns, the condition of the routes, and the speed of the march. Very great irregularities in the matter of time may occur in the event of repeated enemy air attacks.

Summary

Transfer of operational reserves presents problems which have to be solved hurriedly. After the establishment of the movement's detailed plans, the troop commanders, down to the lowest level, are responsible for the smooth execution of the transfer of the operational reserves. Such marches are not identical matters, but maneuvers requiring great amounts of skill on the part of commanders. Only when the march is carefully organized is it possible to move units without major losses and with the expediency required for getting the proper unit to the proper place at the proper time.

BOOKS OF INTEREST TO THE MILITARY READER

THEY HAVE THEIR EXITS. By Lieutenant Colonel Airey Neave. 275 Pages. Little, Brown and Co., Boston, Mass. $4.00.

BY LT COL LEWIS C. TAYNTON, *Armor*

The great castle of Augustus the Strong of Saxony towers above the village of Colditz on the banks of the Mulde River, not far from Leipzig, Germany. With walls 90 feet high, of medieval thickness and standing on solid rock, it did indeed give the appearance of formidable strength. It was to this bastion, known as *Oflag IVc*, that Lieutenant Colonel Airey Neave (then a lieutenant) was sent after his unsuccessful attempt to escape from *Stalag XXa* in Poland. Known as the "Bad Boys Camp," *Oflag IVc* was reserved for the officers of all the allied nations and was considered to be "escape proof" by the German High Command. Records reveal that no less than 11 British or Empire officers escaped from this prisoner of war camp during the war, the first being Airey Neave.

The author's account of his capture on 23 May 1940, near the town of Dunkerque, is described without heroics or pity; and his trip as a prisoner of war to *Stalag XXa* in Poland is both vivid and interesting. One can readily appreciate his feelings whereupon being taken a prisoner he felt that life was over and the purpose for which he had been made was suddenly gone. Yet, feeling as he did, he became an "escapist," an individual who willingly took part in such tasks as digging vertical shafts 40 or 50 feet below the floor of the castle, not knowing where they might lead. These activities were carried on with the aid of broken knives, forks, and bits of metal in an extreme effort to reach the obviously unobtainable.

Arriving at his first prisoner of war camp in February 1941, he escaped on 16 April, but was recaptured 4 days later by German police and turned over to the Gestapo. The author makes no excuses for his first failure. He realized that he had used the wrong technique of traveling too far, too fast, and over the most difficult terrain. He wore himself out physically and was no longer able to cope with the problems and difficulties to be faced.

The character of the man prevented him from giving up or becoming discouraged, and on 5 January 1942—after a second dismal failure—in the company of a Dutch officer, he made good his escape by a most bold and daring maneuver. Eighty-four hours later, on 9 January, they crossed the border into Switzerland and freedom. The account of the 84-hour trip across Germany is exciting and the reader finds himself wondering what he would do as each new situation presents itself.

The book ends on a most fitting note when Colonel Neave (then a major) as a member of the British War Crimes Executive serves, in person, the indictments on Göring, Hess, Jodl, Doenitz, Ley, Funk, Von Papen, Speer, and many others for their crimes during World War II.

If you have ever been a prisoner of war, you will understand this book; if you have not, it will make you think and wonder: "Would I too have been an escapist?"

THE RUSSIAN MENACE TO EUROPE. By Karl Marx and Friedrich Engels. Edited by Paul W. Blackstock and Bert F. Hoselitz. 288 Pages. The Free Press, Glencoe, Ill. $3.75.

BY LT COL ROBERT J. HILL, JR., *Arty*

This volume consists of a collection of 21 articles, speeches, letters, and news dispatches written by Karl Marx and Friedrich Engels, during the period 1848-94.

The editors introduce the collection with a well-written summary of conclusions of Marx and Engels, concerning Czarist Russia of their time, in two principal fields, foreign policy and the internal social structure.

The editors report the following conclusions drawn by Marx and Engels concerning Czarist foreign policy: the strategy of Russian foreign policy is unchanging; tactical changes correspond to shifts in power in its partners or adversaries; and, the prime objective of Russian foreign policy is world domination or, at least, domination of Europe. The first step to this goal is Pan-Slavism; the second step is permanent suppression of Poland.

The editors then point to their main theme: the great similarity between foreign and internal policies of Czarist Russia and Stalinist Russia. They believe that Marx and Engels' critical analyses of Czarist Russia (which has resulted in suppression of some of their writings within Russia) will provide a guide to understanding the present-day Russian menace to free Europe.

The editors point to the interdependence of Russian social structure and foreign policy. They conclude that present-day class structure has not been altered from that of Czarist Russia, and is not the classless society visualized by Marx and Engels.

The book is of interest to those who desire an informative background on Czarist Russia as seen through the eyes of Marx and Engels, two disciples of theoretical communism.

A CENTURY OF CONFLICT. By Stefan T. Possony. 439 Pages. Henry Regnery Co., Chicago, Ill. $7.50.

BY COL L. E. POPE, *Armor*

This book provides a new and interesting approach to the riddle of communism. Dr. Possony traces the birth and growth of communism. He cuts through Communist double-talk to reveal the craftsmanship and virtuosity as indicated in present-day Soviet tactics and strategy.

Basically, this is a book on and about communism. It traces communism from the time of Marx and Engels to the present day. It deals with the "front" and "rear" areas of warfare—the "front," including the Soviet Army, local partisans, and the like; the "rear," made up of Party members operating through front organizations and "peace parties" to spread doubt and indecision. By referring to concrete historical examples and by including quotes from numerous sources, the author has presented a very worth-while book.

Compared with numerous other books on communism, this work is more interesting to the military student for it shows the Communists' use of the principles of war in their plans for world conquest. Communist techniques are represented as the culmination of a co-ordinated effort by several generations of skilled revolutionaries and soldiers. The reader learns: "Lenin valued Clausewitz so highly that when he went into hiding after the July uprising of 1917, he took with him two books—Marx's *The Civil War in France*, and Clausewitz's *On War*." There are numerous other discussions of military interest; perhaps one of the more interesting ones dealing with Mao Tse-tung and his thoughts on the art of war. Mao formulated 10 principles (of war), which the author claims "stand a good chance of becoming a classic in military literature."

A Century of Conflict should prove interesting and enlightening to the layman, statesman, and professional soldier.

LONDON CALLING NORTH POLE. By H. J. Giskes. 208 Pages. The British Book Centre, New York. $3.50.

BY LT COL WILLIS B. SCUDDER, *Arty*

This is another spy story from World War II. Written by the former chief of German military counterespionage in the Low Countries, this book makes a very readable account of events leading up to and during Operation *North Pole*.

The story deals with German successes in using a Dutch radio operator to control secret British activities in Holland between the summer of 1941 and April 1944. During this period, 54 British agents, sent to Holland from London, were captured by the Germans. Bombers, after dropping their supplies or agents, were shot down by the *Luftwaffe* during their return to England.

To gain the confidence of their opponents in the British Secret Service, the *Abwehr* operated "courier routes" through which allied airmen and unimportant information were filtered into England. A further ruse was a planned incident in which a large barge, loaded with scrap aviation parts, was blown up while proceeding up the Maas River in Rotterdam. Such actions served to forestall British suspicions until captured agents escaped to London, thus ending the deception.

An interesting side light is the author's reference to the friction which existed between German Army Intelligence and Himmler's Security Police. The difficulties encountered by the Army in working with such agencies are emphasized, a matter which assumed even greater importance when, after the war, a Dutch parliamentary commission investigated the execution of agents by the Security Police.

For the military reader, interest will center around the techniques whereby agents were drawn into the German intelligence net, and in the above-mentioned conflicts between military and political intelligence agencies.

CEILING UNLIMITED. By Lloyd Morris and Kendall Smith. 417 Pages. The Macmillan Co., New York. $6.50.

BY LT COL WENDELL J. KELLEY, *USAF*

Ceiling Unlimited relates the full story of a half century of American aviation. It covers the period from that December morning on the cold and lonely dunes of Kitty Hawk, North Carolina, when Orville and Wilbur Wright got their motorized machine aloft, until the present day of supersonic flights where altitudes and speeds appear to be the beginning of a new era. It is significant that in less than 50 years, aerial flight has advanced from a nonstop distance of 120 feet (first flight at Kitty Hawk in 1903) to 23,000 miles on an around-the-world flight in 1949. The details of the "in between period" are covered in this book.

This is the story about pioneers and pioneering; about the Wrights, Curtis, Lindberg, Earhart, Hughes, Doolittle, Mitchell, Rickenbacker, Trippe, Arnold, Spaatz, and many others.

Several interesting prophecies are covered which rang true to the ears of the nation during World War II. These include the story of Mitchell's crusade and his prophecy that World War II would start by the Japanese attacking Pearl Harbor. Orville Wright's understanding of the meaning of air superiority when he stated during World War I that, "Supremacy in the air must be so complete as to entirely blind the enemy." General Pershing's statement that, "We should eventually need at least 300 squadrons . . ." These are but a few of the many incidents mentioned.

Even though some effort is required to follow the dates and keep abreast of the time element, the authors are to be commended on their extremely interesting portrayal of details, and in combining in one easy to read book the mass of information that could fill many volumes. It is a short course in aviation history and valuable to personnel of the armed forces.

ELEMENTS OF AMERICAN FOREIGN POLICY. By L. Larry Leonard. 611 Pages. McGraw-Hill Book Company, Inc., New York. $6.00.

BY LT COL HOWARD S. LEVIE, *JAGC*

By means of extracts from speeches and writings dating from the era of Washington, Hamilton, and Jay, to that of Truman, Dulles, and Eisenhower, unified and integrated by substantial and excellent notes by the editor, this book ably accomplishes its purpose of sharply delineating the evolution, meaning, and nature of American foreign policy— ". . . the course of action undertaken by authority of the United States in pursuit of national objectives beyond the span of jurisdiction of the United States."

The texts contained in this book first spotlight the respective roles of the executive and of the legislature in the conduct of our foreign affairs, as well as the mechanics by which these roles are correlated. They then progress to a discussion of how American foreign policy is actually made—and here attention may well be called to the informative, but all too short, section written by the editor which deals with the part played by "public opinion" in the formulation of our foreign policy. Finally, the latter two-thirds of the volume is concerned with revealing current American policy on specific major problems in the field of foreign affairs.

Naturally, of primary interest is the section entitled, "The Crisis With the Soviet Union." Actually, however, just as the battle against communism monopolizes the front pages of our daily newspapers, so it monopolizes much of the contents of that portion of this book dealing with specific problems. As the selected extracts establish beyond cavil, whether we are concerned with American policy with regard to the Soviet Union, or Western Europe, or the Asiatic countries, or most of the other parts of the world, it is the policy of "firm and vigilant containment of Soviet expansive tendencies" which is the basic and common factor.

When the reader puts this book down, he is bound to be better informed on American foreign policy. Foreign statesmen, including some in responsible positions in the governments of both our allies and our putative enemies, would do well to study this volume carefully.

NEW GUINEA AND THE MARIANAS. By Samuel Eliot Morison. 435 Pages. Atlantic, Little, Brown, and Co., New York. $6.00.

BY CAPT DAVID J. WELSH, *USN*

The eighth volume of Professor Morison's "History of United States Naval Operations in World War II" covers a crucial period in the Pacific; a period in which the tide of Japanese expansion, checked at Midway and Guadalcanal, began the bloody ebb back toward the homeland. The Japanese defensive perimeter was pierced by a two-pronged attack; an encircling move through New Guinea and a direct thrust through the Marianas. American submarines and land and carrier based air power disrupted Japanese surface communications and isolated garrisons on island bastions. The Japanese fleet was decisively defeated in the Battle of the Philippine Sea where, as at Midway, the opposing fleets were hundreds of miles apart and the naval engagement was fought by carrier aircraft.

Professor Morison writes history in an extremely readable style. The background information and campaign analyses are interspersed with personal experiences of participants on both sides, resulting in an "on-the-spot" type of historical reporting which holds the readers' interest.

THE TRANSPORTATION CORPS: RESPONSIBILITIES, ORGANIZATION AND OPERATIONS. By Chester Wardlow. 454 Pages. Superintendent of Documents. U. S. Government Printing Office, Washington, D. C. $3.25.

THE RUSSIAN MIND. From Peter the Great Through the Enlightenment. By Stuart Ramsay Tompkins. 291 Pages. University of Oklahoma Press, Norman, Okla. $4.00.

BY LT COL THOMAS O. BLAKENEY, *Armor*

This book deals with the Russian attitudes and the effect of Europeanization on their basic thoughts and attitudes from the Peter the Great era through the Age of the Enlightenment (a period of about 100 years).

The Russian Mind was intended for the specialist on the Soviet Union. Despite the author's tendency to smother the interest of the general reader under an avalanche of scholarly detail, a number of facts emerge which are pertinent in our present co-existence with the Soviet Union: the idea that service to the state is the first and foremost duty of every Russian was fully expected long before Peter the Great. Thus, Communist statism is a logical extension of an accepted philosophy; the individual Russian has no interest in the welfare of his neighbor. For example, during the famine of 1786-87, the Masons labored to feed the starving people only to have their efforts viewed with complete suspicion by both the government and the starving peasants; *donos*, or secret denunciation, is an old and accepted Russian custom; facts have little bearing on Russian logic. Once the solution is decided upon, facts and logic are arranged in the most satisfactory manner. This may help explain some of the recent Soviet boasts of early scientific achievements and inventions; the Russian of the nineteenth century, even as today, desired the technological achievements of the Western World, but rejected the moral discipline which made them possible; lying, failure to keep promises, and lack of good faith in personal and business dealings were not considered disgraceful, but rather reflected on the person who was fool enough to be duped by them.

This is another of a large number of books concerning the Soviet Union which will aid our nation in understanding the cunning and deceit we can expect in our dealings with this old-world power.

TITO. By Vladimir Dedijer. 443 Pages. Simon and Schuster Co., New York. $5.00.

BY COL FREDERICK H. LOOMIS, *Inf*

This is the story of Tito and Yugoslavia as told by himself and one of his closest friends.

Tito, Josep Broz, born in May 1892, of poor peasants, in the Croation village of Kumrovce, is one of fifteen children. His education being finished at the age of 12, Tito went to work tending sheep. He was later employed as a waiter, then became an apprentice to a locksmith, and finally worked as a journeyman, spending his early years as a mechanic in the workshops of Europe.

This is a narrative of Tito's struggles as a socialist for the rights of workers, of hunger strikes, and of the many years he spent in jails, of his fighting side by side with the Partisans in World War II, and of becoming a powerful leader—who was the first to defy Stalin!

The distinguishing differences between Yugoslav communism or socialism and Soviet communism are defined. The trials and executions of Chetnik leaders and the trials of the clergymen are explained.

This book which is well written, interesting, and worth reading, gives the Yugoslav's attitude toward internal and international problems. It tells of a people who are striving in their own way to become free and independent, enjoying all economic, social, and political freedom. This is what Tito calls socialism.

THE QUARTERMASTER CORPS: ORGANIZATION, SUPPLY, AND SERVICES. Volume I. By Dr. Erna Risch. 418 Pages. Superintendent of Documents. U. S. Government Printing Office, Washington, D. C. $3.25.